

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. XLI.

SATURDAY, OCTOBER 28, 1882.

No. 18.

ORIGINAL LECTURES.

LARDACEOUS DISEASE OF THE LIVER.

A Clinical Lecture delivered at the Philadelphia Hospital, September 13, 1882.

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GENTLEMEN: The patient whom you see is thirty-two years of age, an American by birth, and by occupation a puddler. His family history is good, and he himself enjoyed excellent health until September, 1879, when he suffered an injury to his right hip, while lifting a piece of cast-iron. The exact nature of the original injury is not known to us, nor does it immediately concern us. Sooner or later, however, there became established suppurative disease of the bone with fistulous openings, from which discharge is continuous. Of possible importance in connection with the diagnosis is the fact that he was operated upon for *fistula in ano* in February, 1880. The information is not definite, but the operation may have been necessitated by the burrowing of pus in the ischio-rectal tissues. He denies ever having had syphilis.

About six months ago, that is to say, in the month of March, his abdomen began to enlarge, and the enlargement has slowly continued until, at this time, it is evident to superficial examination, and closer inspection shows the prominence to be rather more upon the right side than the left, that is, in the right hypochondrium.

Proceeding to determine the area of enlargement by percussion, we note in the mammillary line, percussing downwards, that dullness begins at the sixth rib. Now this is not higher than the upper border of the liver at this point in health. Indeed, you will find, in some of your text-books, the upper border of the liver in the mammillary line noted as being in the fifth interspace. Proceeding downwards with our percussion, we find that, instead of ceasing at the free edge of the ribs, dullness extends at least four inches below that border. In the median axillary line we note the upper border of dullness at the seventh intercostal space, also in the normal position. But again the lower boundary is far below the edge of the ribs in this line, almost at the crest of the ilium. Anteriorly, also, in the median line, the lower border of the liver, instead of extending only about one-half the distance from the end of the ensiform cartilage to the umbilicus, is found at least two-thirds the way down between these points.

We can only conclude from such an examination that the liver is enlarged. But what is the cause of the enlargement? What is the disease from which our patient is suffering? In the first place, what are the diseases in which the liver suffers enlargement? They include acute congestion, hepatitis, abscess, cancer, hydatid disease, fatty liver, and lardaceous disease. In the first two there is, at most, moderate enlargement, never anything like we find here. There is also tenderness over the region of the liver. Upon very decided pressure there is, in our patient, some flinching, but the tenderness is not marked. There are none of the other symptoms of these conditions, no fever, no headache, no nausea, constipation, or coated tongue; no pain or weight in the right side, or pain in the right shoulder; no jaundice. I think we may, therefore, safely ex-

clude hepatitis and acute congestion. In *abscess* there are the same symptoms more intensified, with possible fluctuation. We need not pause, therefore, to further discuss abscess.

In *cancer*, on the other hand, we have enlargement of the liver, quite as marked as in this instance, and at times even more so. But it would be impossible for the enlargement to reach this degree without cachectic symptoms which are here absent. Indeed, one would scarcely suppose from inspection of the man's face that he is very ill. Again the surface of the enlarged liver of cancer is often uneven or bossilated from the presence of nodules, which can sometimes be felt through the abdominal walls. But the surface of the liver in our patient is quite smooth. Finally cancer of the liver is rarely primary. There is almost always a tumor elsewhere. Here there is not. Cancer may as well, therefore, be excluded from the possible diseases.

The *fatty liver* is also an enlarged liver, and it is a smooth liver as well. But it rarely becomes as large as the organ in the patient before us. Further, it is attended by other exhaustive disease, especially consumption, and is caused by hard drinking and syphilis, none of which are here present.

Hydatid disease of the liver is also attended by enlargement. But here again we have irregular enlargement of the organ, instead of the smooth enlargement here present. In other respects the symptoms are not dissimilar, in the absence of pain and tenderness. We must, therefore, look about us for something which will further aid us to distinguish these two conditions. Lardaceous disease is rarely confined to the liver alone. Most commonly there is simultaneous enlargement of the spleen, and upon examining this organ we find that instead of the usual area of two inches square, which does not extend anterior to the median axillary line nor below the edge of the ribs, we find it occupying a large area of at least four inches square. The kidneys are also sometimes involved in this change, and we recognize it by the presence of albuminuria, but in this case there is none. Enough has been said to make it plain that only one of the diseases discussed can be here present, and that is lardaceous or amyloid disease.

But what is lardaceous disease? It is a disease in which first the cells, and finally all the tissues of the organ, become infiltrated with a peculiar albuminoid substance, the effect of which is to cause them to swell, and assume a glassy lustre, and by the aggregation of these enlarged cells there is produced a corresponding enlargement of the entire organ. This is the infiltration which Virchow first observed, and, in consequence of the peculiar reaction which he noted, called it amyloid substance, though erroneously. The reaction he observed was a blue color, by the addition of iodine and sulphuric acid; whence he concluded that the infiltrating material was amyloid or starchy. This conclusion was soon found to be erroneous, as the substance turned out to be albuminous in composition, while the reaction is by no means a constant one. On the other hand a very constant reaction is that by iodine alone, which strikes a mahogany red color with the amyloid substance, instead of the brown color which is usually produced by treating albuminous tissues with iodine.

A very pretty reaction is also that of anilin violet (a 1 per cent. solution), which strikes a red or pink color with the amyloid material, while the unal-

tered tissues are stained blue, whence a beautiful contrast results.

Most important is a study of the causes which bring about this form of disease, because it will presently be seen that our almost sole power of treatment lies in prevention, rather than cure of the already formed disease. The cause of this form of disease is pretty well determined, and it is found to be either syphilis, or the long-continued presence of some exhaustive drain upon the system, such as occurs in protracted disease of bone with suppuration, phthisis accompanied by copious expectoration, or even long-continued albuminuria. In the patient before us, we are aware of the existence of disease about the head of the thigh-bone for at least two and a half years before the liver began to enlarge, and with the knowledge we have of the causation of the disease, I think we may assert with some positiveness that the hip disease is the cause of the lardaceous infiltration of the liver and spleen.

As to treatment and prognosis, it is evident from what has been said in discussing the etiology that we cannot hope for marked results while the cause is in operation. His hip is full of sinuses, indicating caries of the bone, and it becomes a very nice question, to solve which we must call in the aid of the surgeon, whether operative interference is here justifiable or likely to be attended with beneficial results. The question is further complicated by the fact that there is *existing* lardaceous disease of the liver and spleen, and the question whether, even supposing the bone disease could be cured, we could then get rid of the amyloid condition of the liver. I must say I do not recall a case thus far advanced which has been cured. Nevertheless, it is evident that it is more likely to get well with the causative disease removed than when it is present, and if there is a reasonable prospect of success, an operation directed to the removal of the cause should be performed.

Admitting, as all now do, that surgical diseases are a frequent cause of lardaceous disease, it is nevertheless true that this fact is often overlooked by surgeons, and operations are delayed when a recollection of possible results would suggest earlier operation, and avert the unfortunate complication.

When syphilis is the cause of lardaceous disease, the treatment for syphilis is the treatment for the visceral affection, and it is, of course, the treatment for the secondary and tertiary forms. The persistent use of small doses (by which are meant doses of from $\frac{1}{10}$ th to $\frac{1}{2}$ th of a grain) of iodide of mercury with iodide of potassium is indicated. It is by no means certain that iodide of potassium has the same effect in reducing parenchymatous overgrowth as it has upon interstitial hyperplasias in the liver, but there is, at any rate, no contraindication to its use, and in the present case I have ordered it to be continued in moderate doses of five grains, before each meal, freely diluted. And this is important, for it has been determined that the effect of iodide of potassium upon the liver, at least, is very much more rapid when administered fasting and freely diluted, than when given after meals and undiluted.¹

When phthisis is the cause of the lardaceous disease, the treatment of the pulmonary affection is that of the former. Here cod-liver oil and iodide of iron, with abundant nutritious food, and all possible favorable hygienic influences, are indicated. And it may be said of lardaceous disease from any cause, that a supporting plan of treatment is essential, whatever may be the special indications due to special causes.

¹ See a valuable paper on this subject by Dr. J. M. Guiteras in the Philadelphia Medical Times, vol. x., 1880.

ORIGINAL ARTICLES.

TWIN PREGNANCY, WITH PERITONEAL DROPSY.

PARACENTESIS, RESULTING IN THE EXPULSION OF THE FŒTUSES PRIOR TO THE SIXTH MONTH OF PREGNANCY; RETENTION AND ABSORPTION OF THE PLACENTA, WITH RECOVERY.

BY GEORGE ROWLAND, M.D.,
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(Read before the Fountain County, Indiana, Medical Society.)

My object in this article is to invite attention to the subject of pregnancy complicated with ascites, and the practical importance of an early correct diagnosis.

Effusions within the abdomen may occupy three separate locations, or even more than three; thus during pregnancy, effusions may accumulate within the amnion, and form what is known as dropsy of the amnion; also, effusions may form between the membranes of the ovum and internal surface of the uterus, giving rise to what is known as hydrometra, or dropsy of the womb; and lastly, effusions of fluid may accumulate within the cavity of the peritoneum, giving rise to a true ascites.

Either one of such effusions, accumulating during pregnancy, is comparatively of rare occurrence. It has been said of these dropsies, that they may occur separately, or two of them may co-exist in the same female.

This affection usually makes its appearance in the first half of pregnancy, usually about the fifth or sixth month, but rarely later. When, however, the dropsical effusion begins at an early stage of pregnancy, it sometimes progresses so rapidly that the abdomen may at the fifth month become as large as at the usual term of gestation.

The progress of peritoneal dropsy increases rapidly; the face is puffed; the abdominal walls, thickened by infiltration, present a glistening appearance. The umbilicus forms a smooth, rounded tumor, sometimes translucent, at the base of which is the umbilical ring. This peculiar character of the umbilicus is very important to the physician in making his diagnosis, as the sequel will show. The labia share also in the general infiltration, and are largely swollen. The skin of the lower extremities is greatly distended, is exceedingly painful, and occasionally bursts in a few instances.

But probably of all the symptoms, dyspnoea is the one of which the patient complains the most. It is in this distressing condition that the physician is implored to give assistance. All the organs of the thorax are crowded upon, their functions are obstructed, dyspnoea becomes extreme, respiration is short and painful. The patient at all times is obliged to remain propped in an arm-chair, both day and night, and yet in this position the conversion of venous into arterial blood is so imperfect that every instant she seems to be threatened with suffocation. This distress is aggravated by constant insomnia, headache, extreme thirst, and disgust for food. Percussion and palpation of the abdomen very readily detect a large amount of fluid within its

cavity, though in the following instance it was not equal in all of its parts. The books tell us it is generally absent, or nearly so, in the hypogastrium, much more clear in the hypochondrium, and very well marked in the left hypochondriac region, near the cartilages of the left false ribs.

The large accumulation and enormous distention of the parietes of the abdomen prevent the uterus from being felt and its position determined, and whether or not pregnancy exists is very difficult to determine with any precision. The motions of the fœtus, though obscure, may be felt by the mother, but the presence of a fœtus in utero is one of great difficulty to determine. The large and distended abdomen prevents auscultation from being of any service in determining whether or not pregnancy exists. In the delicate manipulations of ballottement and agitations of the fœtus in utero, or of the uterus itself, which is one of the least equivocal signs of pregnancy, when abdominal dropsy exists, very little can be learned, owing to the great amount of liquid accumulated within the abdominal walls.

Abdominal dropsy, complicated with pregnancy, is a grave affection, and more particularly when in the early stages of gestation. When it occurs in the latter months of pregnancy, there is reason to hope it will be arrested by the delivery of the fœtus before producing any serious disorder, compromising the life of the mother. But when the effusion begins in the first half of pregnancy, there is great cause for alarm, and should the effusions progress rapidly, paracentesis will be demanded long before the ninth month.

The following is a case that was under my care for several weeks, of a woman who during pregnancy had a large accumulation of liquid within the abdomen, requiring paracentesis to relieve urgent dyspnoea, which resulted in the expulsion of two fœtuses, at about five and a half months of gestation:

Mrs. C. aged 37, mother of three children, related the following history: "Was in good health prior to April, 1881. During that month my monthlies ceased; I then suspected I was pregnant. Had no morning sickness, as was usual in my former pregnancies. Did not notice anything particular as to my appetite. My breasts did not increase in size, and nothing was particularly wrong, except my monthlies had ceased. I have three living children, and had two miscarriages, both of which occurred since birth of my youngest child. I felt as well as usual until the first of June, 1881. Then I first noticed my abdomen to gradually increase in size. My urine decreased in quantity, and was very black. Some days I would only pass one-half pint of urine in twenty-four hours. I drank much water, and I had a constant intense thirst. My abdomen continued to increase in size, and my breathing was so difficult that I would almost suffocate. My urine continued to decrease in quantity, and my thirst was never assuaged."

This was the condition in which I found the patient on September 10. After a careful examination of the case, one of the questions was, did pregnancy exist? It will be remembered that the menses ceased in

April, and that the abdomen rapidly increased in size after the first of June. On the part of the patient, no signs of pregnancy existed, save that of the cessation of the menses. There had been no motion of the fœtus felt by the mother. There was great enlargement of the abdomen, but by percussion, fluctuation was produced, showing that a large amount of fluid was evidently in its cavity.

There was no umbilical depression, as we have in natural pregnancy, but instead there was an umbilical tumor. The phenomena presented by the mammae did not confirm pregnancy. On making a vaginal examination, both in the erect and recumbent positions nothing definite could be ascertained. Neither could anything be learned by the usual manipulations and auscultations, that would indicate positively that pregnancy existed. No sounds of the fœtal heart could be heard, and those who claim to be able to detect a twin pregnancy by auscultation might have met with a failure in this instance.

After making a summary of all the symptoms in the case, it was pronounced abdominal dropsy without pregnancy, but with a possibility of there being pregnancy. Paracentesis was recommended, but the patient declined, choosing rather to resort to the usual medicinal remedies, hoping thus to remove the fluid through the emunctories; but vain hope! After a trial of the hydragogues and diuretics, as far as it was prudent to push such remedies, they proved to be of little value. They were resorted to by myself with reluctance, and were relinquished as soon as found to be unsuccessful.

Finally the accumulation of fluids increased so rapidly and to such an extent that the life of the mother was threatened by suffocation, and it was evident that the only means of saving her life was the immediate evacuation of the fluid.

But the question was, where should the puncture be made? If pregnancy existed, the woman was between five and six months of gestation. At this stage of simple uterine pregnancy the fundus of the uterus is an inch above the umbilicus. The development of the uterus thus makes it impracticable to insert the trocar at the usual place of insertion in ordinary ascites, which is from one to two inches below the umbilicus.

The most prominent fluctuation was in the left hypochondrium, and was greatest near the edge of the false ribs, and instances are recorded where the trocar was introduced between the uppermost part of the external border of the rectus muscle and the edge of the false ribs, in the left hypochondrium.

Furthermore, it is very important, before the operation of paracentesis is performed, where there is a possibility of pregnancy existing, to be clear in the diagnosis as to whether we have dropsy of the uterus or dropsy of the peritoneum. The uterus may be distended by fluid to the size which it usually has at the end of gestation, and such a distended uterus may present all the external appearances of an abdominal dropsy.

A dropsy of the uterus may be distinguished from a dropsy of the peritoneum. In peritoneal dropsy the urine is small in quantity and turbid; great thirst; percussion produces fluctuation, which

is more perceptible at the upper than at the lower part of the abdomen.

In dropsy of the uterus the abdomen may be as large as at the ninth month, but fluctuation is obscure, no thirst, and urine in normal quantity.

Thus it was clear that the case under consideration was that of peritoneal dropsy, and such it was pronounced.

On the 22d of September, I introduced a trocar and canula two inches below the umbilicus through the abdominal walls, and drew thirteen pints of clear liquid away. The effect was immediate relief of all the urgent symptoms, and the patient was left an anodyne for the night, promising to call next day. Within twenty hours the woman was seized with labor pains, and in one hour after I reached the house she gave birth to a foetus, which immediately expired. On making an internal examination, a second foetus was discovered, with breast presentation. With but little difficulty it was converted to a foot presentation and removed.

There was little loss of blood—none of any consequence. The uterus was rather sluggish in contracting, and the placenta gave no evidence of being removed. Waiting sufficient time, the left hand was introduced into the uterus, with the expectation of removing them, but here another difficulty presented itself, which was either an hour-glass contraction of the uterus or an enlarged placenta.

Before the true state of affairs could be ascertained, and while the hand was within the uterus, the patient was seized with syncope, lasting nearly two hours. Restoratives were administered, producing rest and sleep, and further counsel requested. Dr. G. S. Jones was called in consultation, and after careful consideration of the case for forty-eight hours, it was decided to make no interference, but trust to restoratives, nourishing diet, with quinia in conjunction with weak carbolic acid solution injection into the uterus. This treatment, with slight variations, was continued for two weeks; the patient rapidly recovered, and on the eleventh day after the operation of paracentesis, she walked across the room and was able to sit up part of the day. Up to the date of writing, Oct. 6, 1881, there has been no removal of the placenta, there is no abdominal dropsy, the kidneys secreting normal quantity of urine, no dyspnoea, no thirst, but instead there is every indication of a rapid and good recovery.

P. S.—At this date, Jan. 30, 1882, the patient having recovered over three months, and no expulsion of placenta, and there being evidence of their absorption.

NOTES ON A CASE OF IDIOPATHIC RETRO-PHARYNGEAL ABSCESS, WITH SOME OBSERVATIONS ON DIAGNOSIS AND TREATMENT.

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On August 8, 1882, Robert H. Clark, æt. 43, native, widower with three children, presented himself for treatment at the Jefferson Medical College Hospital.

The history he gave was as follows: he never had syphilis; early in July, after having been under great anxiety and physical exhaustion from nursing a sick wife, he first felt a slight pain on deglutition. Shortly after, a slight stiffness of the neck, followed by increasing rigidity, became apparent, accompanied by flexion of the head forwards, which soon became so marked as to force his chin upon his chest. Extension of the neck was impossible. As the neck became rigid he began to suffer from an excruciating, lancinating pain—which darted upwards into back and sides of the head, extending as far as the vault. He described this pain as terrible in the extreme. Slowness and difficulty in swallowing increased, soon followed by inability to take solid food. With great care, small quantities of liquids could be slowly swallowed, although frequently the fluid would come out of his nostrils. A short time after his attack began, he put himself under the care of a physician; he continued under his care for some time, when, no relief being afforded, his physician referred him to the Throat Department of Jefferson Medical College Hospital.

Upon admission, patient's face was thin and worn; head flexed on chest, rotation could be moderately effected, and there was a slight fulness of the neck on the right side, beneath the angle of the jaw, with enlarged lymphatics; voice thick, and difficult to understand; respiration somewhat impaired; mouth could be opened sufficiently to admit tongue depressor or finger.

Examination: After the tongue had been gently depressed, a much swollen soft palate and uvula were seen, red and dusky in color. The uvula was pushed well forward into the oral cavity, and very tense. Below the soft palate on the right side, the posterior wall of the pharynx could be seen bulging forward to the base of the tongue, filling up the entire space of the pharynx from before backwards and extending well over beyond the median line to the left. Examination by the finger showed the swelling extending about an inch above the soft palate, but increasing in tension from above downwards until, on a level with the superior margin of the larynx, it was greatest. The swelling appeared to extend about a half inch below the aperture of the larynx. The epiglottis was pushed up against the base of the tongue. On examination with the finger the bulging was found to be elastic, and to show fluctuation. Laryngoscopic examination could not be effected.

Treatment consisted of a small vertical incision about a half inch in depth, and a half inch in length, made with a guarded bistoury, which gave vent to a free flow of pus—pale yellow, thin, and free from odor. Four ounces in all were evacuated. Relief to all of his distressing symptoms was immediate. The contents of the abscess were evacuated (as in the previous case reported by me¹) two or three times a week by passing a probe into the incision, and pumping out the contents with the finger, pressing from below upwards. This manipulation was employed in six or eight sittings. The

¹ Med. and Surg. Reporter, March 25, 1882.

discharge grew rapidly less, and the pus cavity, which was large, gradually filled up with plastic material, and finally became obliterated.

Remarks.—During the year's service at the Throat Department at Jefferson Medical College Hospital, there have been three cases of retro-pharyngeal abscess under treatment. Two of these were idiopathic, occurring at the respective ages of 24 and 43 years; the remaining case (a colored boy *æt.* 14, under the care of Dr. Jurist, who kindly allows me to refer to it) appeared to arise in a constitution profoundly impressed from birth with scrofula, which was probably dependent upon congenital syphilis. This latter case died from secondary basilar meningitis, with a suspicion of an abscess at the base of the brain. The autopsy, which was only allowed upon the vertebræ, showed no disease of their structure. The pus cavity between the posterior wall of the pharynx, and bodies of the vertebræ extended above to the basilar process of the occipital bone, and below to a level with the cricoid cartilage. The fact most impressed upon the mind of the writer from the observation of these three cases, was that there was a mistaken diagnosis in every case by the attending physicians. One case was treated with liniments, etc., nearly four weeks for rheumatism of the neck. Another case, (the boy) had many opinions expressed by his several attending physicians, none of which were at all correct. The third case, (reported above) appeared to have been treated for tonsillitis, as well as could be determined from the medicine prescribed—tincture of iron and chlorate of potassium.

These errors in diagnosis, made by good practitioners, appear more surprising* to a specialist in diseases of the throat than they do to the general practitioner, because the specialist has peculiar appliances and methods for examination of these affections, which are overlooked by the mass of practitioners; noticeably, a good light and palpation with the index finger well into the pharynx. By palpation in this manner, an abscess can hardly be mistaken after pus has formed. In the judgment of the writer, all cases of retro-pharyngeal abscess, where no disease of the vertebræ is present, give indications of early formation of pus. In all three cases mentioned in this paper, pus had undoubtedly been present for weeks, and had caused, from its accumulation and mechanical interference, a serious train of suffering accompanied by impending starvation, which could have been so readily and promptly relieved. Abscess in this quarter occurs so seldom that the physician is generally off his guard. This fact, coupled with those already mentioned—insufficient illumination, faulty and incomplete examination of the throat—makes the mistaken diagnosis almost a certain sequence.

The treatment consists in prompt surgical interference as soon as pus has formed. The evacuation of the pus can be accomplished best by one of two procedures: evacuation by a small vertical incision as high up as the free border of the soft palate, and not low down at the point of greatest tension, as would be generally selected; or by aspiration, which is a safe and satisfactory method. In infants

and children, where exhaustion is always marked, and danger of suffocation from entrance of pus into the larynx imminent, aspiration can be employed with so little risk, and with so much facility, that, in the judgment of the writer, it should supersede all other methods. After the tension of the abscess has been relieved (either by the small vertical incision, or with the aspirating needle) and thereby all risk avoided from the flow of pus, the incision can be somewhat extended, or take the place of the needle. An opening lower down can then be safely made if desirable. The writer does not ever advise a free incision, lest particles of food and drink, or atmospheric air, get into the sac. For the same reason, he prefers the incision high up and very small in extent.

The accumulation of pus can be pumped out from time to time, satisfactorily, with the finger, until the cavity has become filled with reparative material. It is doubtful if any surgical interference from the outside of the oral cavity, made with a view to reach the abscess, is ever justifiable.

PHILADELPHIA, 1417 WALNUT ST.

MEDICAL PROGRESS.

ACUTE PRIMARY RETRO-LARYNGEAL ABSCESS.—DR. GOIX concludes an elaborate study on this subject as follows:

1. Acute primary retro-laryngeal abscess consists in an inflammation of the connective tissue in the retro-laryngeal space.

2. Its appearance is characterized by the simultaneous occurrence of fever, laryngeal pain, feebleness and hoarseness of voice, cough, dysphagia, and symptoms of laryngeal stenosis.

3. Normally, when moved from side to side, the posterior edges of the thyroid cartilage may be felt to glide over the vertebral column; this *thyro-vertebral friction* disappears in retro-pharyngeal abscess, but persists when the abscess occupies the retro-laryngeal space.

4. The gravity of this disease cannot be explained by the mere interference with respiration from œdema of the glottis; the inflammatory irritation of the various laryngeal nerves should also be taken into consideration.

5. The best treatment seems to consist in the administration of large doses of tartar emetic and the application of several blisters. If tracheotomy is required by the urgency of the symptoms, the pus should be evacuated, even after this operation.—*Arch. Gén. de Méd.*, October, 1882.

PAGET'S DISEASE OF THE NIPPLE.—It is of the utmost importance to come to a definite conclusion with regard to the nature of this disease, whether it is primarily of an eczematous nature ultimately terminating in cancer, or whether it is of a malignant nature from the outset, as the treatment, of course, must vary according to the view we adopt. PROF. MCCALL ANDERSON has seen a number of cases of this disease and believes that in persons predisposed to cancer, any local irritation may determine an outbreak of the disease at the part irritated; thus we have frequently seen an undoubted syphilitic disease of the tongue followed by cancer of that part, as the result of the long-continued irritation; and just in the same way it is possible for a simple eczema of the breast to prove the exciting cause of, and to be followed by, cancer of the mammary

gland. But if we exclude these exceptional cases, we can arrive at no other opinion than that "Paget's disease of the nipple," is from the first of a malignant nature, and bears a somewhat similar relation to cancer of the breast that the so-called tylosis (or psoriasis) linguæ does to epithelioma of the tongue. Such being the case, it is of the utmost importance to distinguish true eczema of the breast from "Paget's disease of the nipple," towards which the following may be of assistance:

1. "Paget's disease of the nipple" occurs especially in women who have passed the grand climacteric. Eczema of the nipple and areola occurs especially in women earlier in life, and particularly during lactation, or in persons laboring under scabies.

2. Affected surface, in typical cases of Paget's disease, of brilliant red color, raw and granular-looking after the removal of crusts. Surface not so red and raw looking in eczema, and not granular, but often punctated.

3. When grasped between the thumb and forefinger, superficial induration often felt, in Paget's disease, as if a penny were laid on a soft elastic surface and grasped through a piece of cloth (Thin). Eczema is soft, and no induration.

4. Edge of eruption abrupt and sharply cut, and often elevated, in Paget's disease. Edge not so abrupt, and not elevated, in eczema.

5. Paget's disease is very obstinate, and only yields to extirpation or other treatment applicable to epithelioma generally. The other disease, although sometimes obstinate, yields to treatment applicable to eczema.—*Glasgow Medical Journal*, October, 1882.

RESECTION OF THE HIP UNDER ANTISEPTIC PRECAUTIONS.—BOECKEL (*Gaz. méd. de Strasbourg*, 1, 1882) advises resection in suppurative hip disease in cases where the patient is failing, and in the non-suppurative cases where crepitation is marked. If the external surroundings of the patient are good, in suppurative cases he advises incision, emptying of the pus, and drainage. The indication is the same in acute osteo-mylitis and ostitis juxta epiphysaria. He favors subtrochanteric incision, and removal, as far as possible, of the fungous synovial membrane and clearing the acetabulum. The external incision is not sewed. Extension is to be applied for several weeks. At the end of four to six weeks the patient is allowed to get up, extension being applied at night, crutches and a raised shoe on the well foot being used in the daytime. In from three to four months the limb can be used. The author reports a small number of cases, but with good result.

GROSCH (*Centralb. f. Chir.*, 14, 1882) has collected one hundred and sixty-six cases of this operation, done under strict antiseptic precautions. In presenting the cases he has grouped them under heads corresponding to the condition of the joint at the time of the operation. The first stage he classifies as that where the pathological change is slight, and where the suppuration, slight in amount, has not worked to the outside. In the second stage fall those cases with extensive suppuration and established fistulæ. The third class comprises those patients who have become much reduced by prolonged and extensive disease. Out of one hundred and twenty cases watched to the end, forty-four died, a mortality of 36.7 per cent., a percentage which corresponds with that of Guy's Hospital, Volkman's clinic, or the Copenhagen clinique, and is lower than Culbertson's tables taken from cases not all treated antiseptically, and is much lower than Leisrink's mortality before the introduction of the antiseptic method, 64 per cent. Furthermore, dividing the cases into two groups, those occurring between 1870 and 1875, during

the apprenticeship of the antiseptic technique, the percentage of mortality was 9 per cent higher than since that time. The mortality in the first stage of the disease among children was 0 per cent., in the second stage 24.1 per cent., and in the third 67.5 per cent. Antiseptic dressings do not seem to have effected any change as to the usefulness of the cured limb as compared to that before the method was introduced. This is a matter which is not yet definitely settled, but a number of cases were established where an almost normal usefulness of the limb remained unimpaired many years after the operation.

Where, during the operation, perforation of the acetabulum occurred, the percentage of mortality increased twenty per cent.

The writer further found that the duration needed for recovery was not influenced by the antiseptic method of dressing, but it gave a greater immunity against wound complications.—*Boston Medical and Surgical Journal*, October 12, 1882.

RESECTION OF A CARCINOMATOUS PYLORUS.—DR. EUGENE HAHN reports the case of a woman aged 63, in whom he excised the pylorus for a cancerous tumor. Billroth's method of operation was followed in all its details, with the exception that he employed the Lembert suture in preference to the method advocated by Czerny, while he adopted the plan of Wölfler, in passing the first sutures through the posterior wall and fastening them on the mucous surface, thus reducing the difficulty in applying the final sutures. Four days after the operation the patient was still doing well, no elevation of temperature being present, and the vomiting which was troublesome on the day after the operation having been relieved; but on the seventh day violent vomiting again appeared, and the patient died under the symptoms of peritonitis from perforation. At the autopsy several of the sutures were found to have given away.—*Berliner klin. Woch.*, Sept. 11, 1882.

CASES OF REMOVAL OF A PORTION OF INTESTINE.—DR. WM. FULLER reports in the *New York Medical Record*, Oct. 14th, three cases of partial intestinal resection for strangulated hernia; recovery took place in all.

CHOLERA AND FILTH.—The exact nature of the relation between cholera and filth is a subject admitting of speculation and discussion, and the question will not be satisfactorily solved until the precise cause of cholera has been demonstrated; but of the reality of the relation as a matter of fact there can be no reasonable dispute. Strong evidence exists in Calcutta which goes to support the doctrine that, whatever the nature or cause of cholera may be, filth has much to do, if not with its origin, certainly with its propagation—filth in air, water, and food; filth due to neglected conservancy; filth consisting mainly of the decomposing excreta of men and animals. The history of cholera in this town points to a marked abatement of the disease coinciding with important sanitary improvements, more especially with the introduction of a supply of pure water and its distribution in such a manner as to prevent contamination in transit. The most important fact shown by the report of the Health Officer of Calcutta, is that the sections which exhibit the lowest general death rates are those in which the sanitary conditions are most favorable, in which the streets are widest and best kept, the houses largest and sparsest, the drainage most complete and efficient, pure water universally used, and the inhabitants most observant of the rules of hygiene, domestic and individual; while on the contrary the sections with highest death rate are the most crowded and filthy, with narrow, muddy

streets often heaped with refuse and rubbish, foul pits and ditches, ill-kept stables and byres, wells and tanks filled with diluted sewage, with numerous *bustis* or villages ill-ventilated, over-crowded, and filthy, in which the poorer classes, ignorant and careless as regards cleanliness, mass themselves together in poverty and squalor.—*Indian Medical Gazette*, Sept. 1, 1882.

PROLAPSE OF THE LARGE INTESTINE; RESECTION; DEATH.—PROF. AUFFRET, of Brest, reports the case of a young woman, aged 25 years, with marked rachitic deformities of the limbs, who had for three years suffered from obstinate constipation, to overcome which she was in the habit of using all sorts of cathartics and injections. On the 26th of October, after prolonged straining she had a prolapse of the large intestine, about 35 cm. in length, which it was impossible to replace by taxis. On the following day, the prolapsed portion of the bowel was excised, and the divided end of the large intestine united by catgut sutures to the mucous membrane of the large intestine just within the anus. The patient died of collapse during the night after the operation.—*Le Progrès Médical*, Aug. 26, 1882.

COMPARATIVE ACTION OF THE BROMIDES.—MM. CHÉRON and FOUQUES, having experimented at some length with the three well-known bromides (of potassium, sodium, and ammonium), have reached the following conclusions: These salts act, in virtue of their bromine, as moderators of the reflex centres. The bromide of potassium joins to its sedative action on the nervous centres a depressing action on the muscular system; it is thus a *neuro-muscular* agent. The bromide of sodium has an action like that of bromide of potassium on the nervous centres, but does not affect the muscular system; it is thus simply a *moderator of reflex action*. The bromide of ammonium has, in virtue of its bromine, an action on the nervous system similar to that of the other two, while it is also, in virtue of its ammonia, an excitant and diffusible; it is thus at once a *moderator of reflex action* and a *peripheral excitant*.

Consequently, when it is desired to influence the reflex powers and the muscular system, preference should be given to the bromide of potassium; if, however, we wish to act only on the reflex centres, the bromide of sodium is indicated; finally, if, leaving the muscular system out of consideration, it is desired to act on the nervous centres, to restrain the circulation and to effect a diminution in blood pressure, the bromide of ammonium will most probably give the required result.—*Glasgow Medical Journal*, Oct. 1882.

THE SIGNIFICANCE OF KOCH'S DISCOVERY.—In a recent letter to the Berlin Reichsgesundheitsamte, PROF. BILLROTH discussed some of the practical aspects of Koch's discovery. He pointed out how the accumulating knowledge of the coarser pathological relations of tubercle have led to the conviction that the discovery must shortly come, and he paid a tribute to the investigations of Villemin, as having constituted the first and greatest step in the discovery—the step of demonstrating that tubercle is inoculable. This proved its dependence on a transferable virus, although we are only now able to eliminate the possibility that the virus might be of simply chemical nature. The various degrees of individual proclivity to suffer, observed in man, render it very important to study the variations of proclivity which are observed in animals. As a rule, it appears that the carnivora are less susceptible than the vegetable feeders (an unpleasant fact, by the way, for vegetarians). In the case of man, the only safeguard is the normal unsuitability of the soil, apart from the existence of inherited fitness. But another reason why local tubercle often exists without general

infection—why, for instance, scrofulous caries of a rib so often exists without a general infection—is due to mechanical conditions. At the periphery of such a tubercular focus, in a bone or a lymphatic gland, there is an induration which probably hinders the exit of the tubercular organism and its passage into the blood current. The necessity of a high temperature, such as that of the blood, for the growth of the organism, probably lessens very much the extent of the disease in man, since, if the germs could develop out of the body, they would probably be ubiquitous. While the discovery of Koch raises even into greater importance than before the inherited predisposition, it will probably lead to some modification of our views as to the influence of that predisposition. Cases may be due to infection which are regarded as the result of inheritance only. A consumptive mother, for instance, may infect a child through a pocket handkerchief; moreover, the germs may be received by eating the flesh of infected animals. Certainly the conclusions are sufficiently probable to make it incumbent on us to treat consumption as in a measure an infectious disease.—*Practitioner*, October, 1882.

NEW METHOD OF TREATMENT OF HYPERTROPHY OF THE TONSILS.—PROF. MORESCO, of Cadix, read a paper before the Congress of Seville (*Revista de Med. y Cirurgia practica*) in which he recommended the treatment of hypertrophy of the tonsils by interstitial injections of acetic acid: he reports two cases perfectly cured by this method. He gives the following as the advantages of his method:

1. Its facility of performance.
2. The impossibility of causing any serious results.
3. The gland preserves its functions.
4. It requires no interference with the patient's occupation.
5. It is absolutely painless.—*Rev. Mens. de Laryngol., d'Otol. et de Rhinol.*, Oct. 1, 1882.

SPONTANEOUS RUPTURE OF THE UTERUS.—M. SALIN (*Sw. Läkare Sällsk. Förhandl.*) reports the case of a woman 33 years old who had already had one child, with normal labor. The last menstruation occurred in August, 1881. She was in good health throughout the whole pregnancy. On the 9th of March she had pains simulating labor-pains, but was yet able to work. The next day in the evening she was seized with severe pains, which became more intense after a rectal enema, and so continuous and violent that she moaned loudly and without ceasing. There was slight hemorrhage from the vagina. The pulse was small, 130 to 140. Temperature in rectum 38° C. The abdomen was distended and tender, tympanic in its upper part, and there was dullness in its lower part. Foetal parts could be felt around the navel, but it was impossible to perform palpation in consequence of the great tenderness. The canal of the cervix was sufficiently open to admit the finger. Immediately within the os internum it came in contact with a large foetal part. Death occurred on the third day.

The autopsy revealed a rupture of the uterus at the fundus, through which the foetus had escaped into the peritoneal cavity, the membranes remaining unbroken. The foetus was in the eighth month. It was at first supposed that the rupture was due to some change in the muscular structure of the uterus, but subsequent careful microscopic examination of the parts showed that no change whatever had taken place in the uterine muscular tissue.—*Louisville Medical News*, October 14, 1882.

RESECTION OF THE LONG BONES.—MR. ARTHUR NEVE reports three cases of resection of the long bones,

and urges that when necrosis of a long bone is an accomplished fact, the surgeon should operate at the earliest possible period, as he will thus substitute rapid repair for slow separation, healthy granulation for sloughing and suppuration. He would urge that the removal should be thorough, even bold; the re-formation of a considerable portion being easier than the casting off of a small sequestrum. When this practice becomes general we shall, he believes, see fewer deaths from hectic, and text-books will discuss at less length the subject of amputation after necrosis.—*Indian Medical Gazette*, September 1, 1882.

A SIMPLE METHOD OF INTRODUCING MEDICINAL SUBSTANCES INTO THE MIDDLE EAR, AND OF MAKING APPLICATION TO THE NASAL MUCOUS MEMBRANE.—M. PURICELLI (*Rundschau*, No. 7, 1882) recommends, in order to retain substances in contact with the nasal mucous membrane, that the patient should pronounce the vowel A, at the same time throwing the head back and breathing through the mouth, thus preventing all communication between the nasal fossæ and pharynx.

If the patient pronounces R while a stream of air is forced through the nose, the liquid will penetrate to the middle ear.—*Rev. Mens. de Laryngol., d'Otol. et de Rhinol.*, October 1, 1882.

A NEW CAUSE FOR MERCURIAL POISONING.—Two cases having recently come under our notice in hospital practice of mercurialism in men employed in exhausting the little globes used in the incandescent system of electric lighting, we think a brief notice of the fact will be interesting, and may perhaps call forth more information from others. In each instance the gums were swollen, spongy, and tender, and there was salivation. The patients were employed in the same room, and both knew that mercury was the cause of their ailment. So far as we could gather from their account, the poisoning must have been due to mercurial vapor from the exhausting pumps, as no mercury was used except that contained in these pumps. From the statement of one of the patients we should infer that all those employed in the room would suffer from these symptoms, and have to give up the work in less than a year.—*Med. Times and Gazette*, October 7, 1882.

FIBROMATA AND CYSTO-FIBROMATA OF OVARY.—DR. H. A. COE draws the following deductions from a study of this subject:

1. Fibrous tumors may, and do, arise from the ovary, independent of the uterus or the other adnexa.

2. In structure these tumors are true fibromata, yet peculiarly rich in long spindle-cells, which closely resemble those of the normal stroma; hence,

3. These fibromata originate, not by a local change, but as the result of a general hyperplasia of the ovarian stroma. Moreover, there is nothing to show that this process is of an irritative, or inflammatory, character.

4. The resemblance between microscopic sections of ovarian and uterine fibroids is so close that the differential diagnosis is very difficult, if not impossible.

5. Cysto-fibromata of the ovary, like those of the uterus, are of secondary formation, and result from changes in previously solid tumors.

6. Such cysts probably arise from the so-called "geodes" or "gelatinous patches."

7. These "geodes" do not represent any form of degeneration at all, but are dilated connective-tissue spaces, filled with a coagulable serous fluid, resembling lymph.

8. The "geodes" are probably dilated lymph-spaces, which expand by reason of the accumulated fluid in their interiors—a condition due to a general stasis.

9. That lymph-spaces rather than lymph-vessels are

the seat of these changes is evidenced by their irregular shape, intimate relation with the surrounding tissue, manner of dilatation, and absence of endothelial lining. But that the proper vessels may also dilate in like manner is not improbable. (Comp. the "Ampullæ" observed by Leopold.)

10. Simultaneously with the lymph-stasis, there often exists a disturbance of the blood circulation, giving rise to œdema, extravasation, and various local changes, but these are factors in the subsequent growths, not in the origin of a "geode."

11. Commencing cysts grow by increase of the contained lymph, by accessions of blood and serum from adjacent vessels, and by degeneration of the surrounding tissue.

12. At no time in its history does a cyst possess a proper wall, since what at first appears to be such is merely the surrounding fibrous basis of the tumor, condensed by long pressure. A cellular lining upon the apparent wall of a fully developed cyst (originating like those referred to in this paper) is certainly very rare in a young growth, and highly improbable in the case of one of advanced age.

13. The fluid found in these cavities has originally the properties of lymph, but becomes so changed by intermixture with other elements, that its examination for clinical purposes does not furnish positive results.

14. The *ultima causa* of dilatation of the lymph-channels and consequent cyst-formation in fibroid tumors is unknown. Clinical observations lead to the inference that, in many cases, the active influences are within the growth itself.—*Amer. Journ. of Obstet.*, October, 1882.

FORCED FEEDING.—Recognizing the value, and at the same time the inconvenience attending the employment of forced feeding by the method proposed by M. Debove, M. DUJARDIN-BEAUMETZ has been making a number of experiments looking towards an improvement in the methods employed. In the first place, he finds that it is not necessary that the tube should penetrate the stomach; all that is necessary is that the tube should enter the upper part of the œsophagus, when the food can be forced into the stomach by pressure and efforts at deglutition on the part of the patient. It is also advisable to use a smaller tube than that employed by M. Debove. He recommends the administration of fluids by means of hydrostatic pressure.—*L'Union Méd.*, September 17, 1882.

A NEW SIGN OF PREGNANCY.—In the first two months of pregnancy there exists no sign which can be called diagnostic; JORISSENNE (*Arch. de Tocologie*, June, 1882) seems to furnish one. Long ago Graves formulated the law that in cardiac hypertrophy the radial pulsations remain constant, whatever the position of the body. Starting with the assumption that in pregnancy there exists an hypertrophy of the heart (and this assumption, if erroneous, will not affect J.'s results), he has found that, whilst in health there is a variation of from ten to twenty beats in the radial pulsation, according as the body is upright or horizontal, in pregnancy, no matter what the position, the beats number the same. J. has been able to diagnosticate pregnancy as early as the first month when no other sign except the missing of a menstrual period was present. When examining a patient for this sign, it is necessary to proceed with deliberation, first counting the radial for the space of fifteen seconds whilst the patient is standing, then sitting, and then reclining. The order may then be reversed, and uniformly the same number of beats will be recorded. J. promises an explanation of this phenomenon in a future paper.—*American Journal of Obstetrics*, October, 1882.

CASE OF GASTROSTOMY.—The patient recently operated on by DR. FELIZET is now convalescing, and the Paris correspondent of the *Lancet* gives the following account of the case. On September 10th, a young Swiss man, aged 19, was amusing the customers of the *café*, where he was employed, by introducing a long spoon, such as is used for stirring coffee when served in glasses, into the oesophagus, pushing it as far down as he could and then withdrawing it. The performance was brought to an abrupt ending by the spoon slipping out of his fingers and disappearing down the alimentary canal. The following morning he was seen at the hospital by M. Felizet. Palpation revealed the existence of a foreign body, which projected in the left hypochondrium. Pressure upon this spot was painful, and caused a pricking sensation below the liver. The patient complained also of a feeling of constriction in the epigastrium, of difficulty in breathing, and of a painful sensation with each movement of the diaphragm. There was a constant flow of saliva and mucus from the mouth. Opium and ice were given to allay the pain, but in spite of this no sleep could be obtained, and bilious vomiting set in. This symptom, together with the patient's anxiety and suffering, decided M. Felizet to operate. In order to lessen the chance of the escape of any liquids from the stomach into the peritoneum, and to manipulate the abdominal organs as little as possible, the following plan was devised: A small India-rubber tube was introduced through one nostril into the stomach. The outside extremity terminated in a Y-shaped branch, upon one division of which was a funnel, whilst the other was in communication by means of a tube with a recipient containing ether. To begin with, the stomach was washed out by pouring a solution of sodium bicarbonate into the funnel, and then depressing the end of the tube below the level of that organ, so as to act as a siphon. The patient was then brought under chloroform and the operation continued with antiseptic precautions. An incision was made seven centimetres long, parallel to and one and a half centimetres below the edge of the false ribs, extending from the line of hepatic dulness, three centimetres below and external to the xiphoid appendix, to a point on the left side on a level with the junction of the ninth and tenth costal cartilages. The sheath of the rectus, and some of its fibres were divided, and the peritoneum exposed. Hemorrhage having been entirely arrested by torsion and ligature, the recipient containing ether was plunged into a vessel of water at 60° Centigrade, and the stomach at once became distended by the vapor, and the peritoneum, being divided upon a director, protruded through the wound. Ten sutures in all were then made to fix the stomach to the abdominal wall, the ether being allowed to escape, in order to ascertain whether the juxtaposition of the surface was complete. One spot appearing defective, the stomach was distended again, and another suture inserted. An incision six centimetres in length was then made in the axis of the wound. After the vapor had escaped, the stomach was found to be perfectly clean and empty. The spoon was felt, lying transversely across the stomach with one end in the pylorus and the other in the greater curvature; it was then extracted without difficulty. After the operation the patient was kept under the influence of morphia by small hypodermic injections. Tea and rum were given as a drink, with small pieces of ice. Antiseptic dressings were applied. The after-effects of the operation were not serious. There was no fever or tenderness of the abdomen. The most distressing symptom was great thirst, but this was relieved most satisfactorily by enemata of cold water. Notwithstanding the dressings, the liquids swallowed passed through the wound. On the fourteenth day, a

little milk was given, but this oozed through the dressings, and was not renewed. On the fifteenth some meat was tried, but caused uneasiness. On the first of October, a considerable portion of the wound had healed, and all that remains is a fistulous opening, closed by a pad. The patient eats meat, vegetables, and pastry.—*Lancet*, Oct. 7, 1882.

THE EFFECTS OF THREAD AND ROUND WORMS UPON CHILDREN.—M. ARCHAMBAULT recently made some clinical remarks at the Hôpital des Enfants Malades, Paris, on the effects produced by the *Oxyuris vermicularis* and the *Ascaris lumbricoides* in young children. He said one of the smallest and most curious worms, the presence of which causes so much trouble to young children, is undoubtedly in the so-called "thread-worm," the *Oxyuris vermicularis*. This helminth has its abode in the lowest part of the rectum, just within the anus. It is the cause of a number of troubles, and of very severe itching, which is chiefly nocturnal, and therefore often characteristic of the presence of this particular worm. The itching is sometimes so severe as to make children cry; it prevents sleep, and so gives rise to extreme irritation, which may bring on convulsions. This worm is also met with occasionally in adults, and has, by the intolerable itching to which it gives rise, brought on a veritable condition of hypochondriacism. Another effect, in certain cases, is an inflammation of the rectal mucous membrane, accompanied with tenesmus and muco-sanguinolent stools. In female children the worms may find their way into the vagina, and so bring on a vulvitis, more or less intense, with secondary effects which are most undesirable. Thus, although the presence of these minute worms is not in itself dangerous, yet the secondary consequences may be really grave. Their treatment is as follows: Administer an enema, for five or six consecutive evenings, of lime-water; if this is not sufficient, add—as Dr. West advises—a little perchloride of iron, and the worms will be almost certainly destroyed. Or a mercurial suppository may be tried if the enemata do not succeed. It is very desirable that the enema be properly administered, and in sufficient quantity; it should pass up as far as, or even beyond, the sigmoid flexure, so as to dislodge any worms which may have crept up beyond their usual site. As regards the lumbrici, it may be said that they are harmless ("*assez innocents*"); it is only when very numerous that their presence becomes dangerous. M. Archambault was once called to see some children who had just arrived from Brazil, and who had been taken ill with convulsions, vomiting, and diarrhoea. Finding in the stools a number of these round worms, he ordered calomel and santonin. An immense number of worms was passed—"it would be no exaggeration to say that the three children in three days passed a hatful of these helminths." There are so many other anthelmintics than those just mentioned, that the physician's chief difficulty is the *embarras du choix*.—*Medical Times and Gazette*, October 7, 1882.

THE RATIONAL TREATMENT OF ANTERIOR AND POSTERIOR UTERINE DISPLACEMENTS.—At a recent meeting of the Dublin Obstetrical Society, DR. A. V. MACAN read a paper on this subject, of which the following are the conclusions:

1. The normal position of the uterus when the bladder is empty is one of ante flexion. Hence mechanical treatment of ante flexion is rarely called for, and if symptoms be present our efforts should generally be directed to the cure of the complications.
2. In retroflexions or versions the primary indication is to treat the displacement. In order to do this effectually we should place the uterus in a position of exag-

gerated anteversion, and then fix the cervix posteriorly by a pessary.

3. Hodge's pessary, or any other pessary used for the cure of retroflexion, when uncomplicated with adhesions, should act by fixing the cervix posteriorly, and not by pressing against the fundus and elevating it.

4. Versions are, so far, more serious than flexions, in that they are caused by rigidity of the uterine parenchyma, which is generally due to chronic metritis.

5. To make the results of the bimanual examination of any use for comparison with the results of other observers it must be made in the dorsal position, the bladder having been previously emptied.

6. A great deal of the confusion that exists about the treatment of anterior and posterior displacements originates in its being taken for granted that any treatment that is found suited to an anterior displacement must be equally suited to a posterior one, and *vice versa*.—*Dublin Journal of Medical Sciences*, July, 1882.

VASO-MOTOR PHYSIOLOGY.—The vaso-motor effects which are produced by faradic stimulation of the peripheral segment of the lingual nerve have been lately studied by M. VULPIAN. This stimulation is well known to cause a considerable dilatation of all the vessels of the corresponding half of the tongue in the region in which this nerve is distributed. The experiment is easily performed on a dog under the influence of morphia, or which has been curarized and subjected to artificial respiration. The mucous membrane in this region, and also on the corresponding side of the frænum, becomes bright red, and a similar change may sometimes be observed in the mucous membrane of the gum on the inner surface of the lower jaw near the canine and incisor teeth. The principal vein of this part of the tongue becomes turgid, and the blood contained in it and its tributaries becomes bright in color, resembling that of arterial blood, while there is a corresponding rise in the temperature of the part. These phenomena are produced sometimes after the lingual artery has been tied, and even after the internal and external carotid arteries of that side have been tied just above their origin, and the carotid itself has been tied in the middle of the neck. Nor are they prevented even by the ligature of the common carotid and the vertebral. The effects are equally marked after the section of the vago-sympathetic trunk, and after excision of the superior cervical ganglion. When the circulation has been definitely arrested, as by the farado-puncture of the animal's head through the thoracic wall, the opposite half of the tongue becomes pale before that on which the lingual has been faradized. Thus the effect of the stimulation is opposed to the occurrence of the constriction of the vessels, which occurs throughout the body almost immediately after death. Another remarkable fact noted by Vulpian is that at the moment when the dilatation occurs, in consequence of the faradization of the nerve, there is a distinct contraction of the vessels on the opposite half of the tongue. It is not merely the result of the determination of blood from one-half of the tongue to the other, but is the effect of a distinct activity of the vaso-constrictor nerves, for there is a distinct darkening of the blood. This condition, however, does not last so long as the dilatation of the vessels on the faradized side. The latter may continue for ten minutes, while the former has disappeared in half a minute. This vaso-constriction appears to be reflex, for it is far less conspicuous if the vago-sympathetic trunk on that side has been previously divided. The lingual nerve seems thus to possess a certain amount of recurrent sensibility, which is manifested by this reflex action when the peripheral extremity of the divided nerves is stimulated.—*Lancet*, Oct. 7, 1882.

THE BACILLUS OF TUBERCULOSIS.—That defective ventilation, or, in other words, vitiated air, is one of the most, if not the most potent factor in the production of tuberculosis, is among the best-established facts of hygiene, however the actual relation may be explained. In the Biological Section of the meeting of the British Association for the Advancement of Science, MR. F. J. FARADAY read a paper entitled "Considerations arising from Koch's Discovery of the Bacillus of Tuberculosis," in which, after referring to the suggestions made by Dr. William Roberts in his address to the British Medical Association in 1877, that disease-germs might be "sports" from harmless saprophytes which had acquired a parasitic habit, and to Pasteur's observations on the decreasing virulence of specific disease-germs when kept in the presence of oxygen, he asked whether deprivation of oxygen might not play an important part in the development of the tubercle-bacillus out of comparatively innocent forms. Dr. Angus Smith has argued that putrefaction carried on in confined spaces, as sewers, may give rise to disease-germs—enteric, diphtheritic, etc.—which are not developed when the same process goes on in the open air and in rivers; and Mr. Faraday thought that analogous conditions might be found in the lungs of persons engaged in dusty trades, working in ill-ventilated rooms, or otherwise habitually respiring imperfectly. Innocuous germs inhaled into the lungs of such persons may there undergo successive cultures in the presence of a reduced amount of oxygen, and thus, in course of time, develop into the specific bacillus of tubercle, which may then be capable of establishing itself in the lungs of healthy persons, provided they be especially susceptible or possess feeble powers of resistance. The decrease in the mortality from phthisis in the army, following on improved ventilation of barracks, the benefit of as many hours as possible spent in the open air, of sea-voyages, and of iodine or carbolic inhalations in phthisis, all seem to lend support to the hypothesis.—*Medical Times and Gazette*, October 7, 1882.

DIPHThERITIC PARALYSIS.—DR. HENRI LEROUX reports an unusual case of paralysis, consequent upon a comparatively mild case of diphtheria occurring in a boy aged fifteen years. After the angina had lasted a week paralysis of the soft palate was noticed, and a month later there was marked ataxy of both upper and lower limbs, but without paralysis and with no loss of sensibility—loss of coördination being the marked feature. The muscles acted well with the induced current, but the patella reflex was absent. Dr. Leroux believes that the condition could only be explained by some alteration in the nerve-centre for coördinate movements.—*Revue de Médecine*, September 10, 1882.

HYGIENE IN HOUSE WALLS.—MR. T. R. BAKER, in a paper read before the Am. Assoc. for Advancement of Science, "On the Permeability of the Linings of House Walls to Air," assumed that ordinary wall paper made the walls nearly air-tight. Hygienically considered, the walls of a house should be porous, like our clothing, so that our bodies can have through them, as also through our clothing, free intercourse with the external air. Compact wall linings, even if their minute pores are open, greatly interfere with this intercourse; but if their pores are closed with water, as when the walls are damp, it is almost completely cut off; and such linings increase the dampness of walls by preventing their drying in wet weather. The prolonged dampness also prolongs other evils produced by damp walls; therefore wall papers and their substitutes should be condemned, and the old-fashioned whitewashed walls commended.—*Popular Science Monthly*, November, 1882.

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SATURDAY, OCTOBER 28, 1882.

DEMENTIA PARALYTICA.

THE MEDICAL NEWS expressed the opinion, long in advance of the microscopical examination, that Guiteau presented the symptomatic type of dementia paralytica. The only alienist, so far as we are aware, who announced the same view was Dr. Folsom, of Boston. Under the overshadowing pretensions and loud declamation of the experts for the defence, the theory of reasoning mania, or, as they, with a fine sense of the effect of erudition, are delighted to entitle it *primäre Verrücktheit*, came to be held by all the followers of these noisy neurologists. As we have had something to say regarding the relation of such a mental condition to criminal responsibility before the law, it will be desirable to place before our readers the modern conception of this strange malady. Beside these circumstances, by which the present attention of physicians is directed to dementia paralytica, this malady deserves attentive study, because of the frequency of its occurrence, the sad complications to which it gives rise, and its gloomy termination.

Dementia paralytica is a term which correctly expresses the morbid complexus, consisting of mental failure with paralytic symptoms. It is more commonly known as "general paralysis of the insane," and from the pathological standpoint has been designated "diffused interstitial encephalitis." The morbid anatomy consists essentially in an atrophic degeneration of the gray and white substance, the initial change occurring in the walls of the capillaries and in the perivascular lymph spaces, and the final result being wasting of the brain. It is not now necessary to our purpose to enter with more

particularity into the morbid anatomy, as we are more concerned with the symptomatic development.

One of the early symptoms, objectively regarded, is a hesitancy of speech, accompanied by tremors of the tongue and lips. Coincidentally, or preceding the speech defects, changes in the character become manifest, such as irritability and a quarrelsome disposition, not in accordance with their former history. After this, expansive notions begin to be entertained and wild projects are undertaken. Or if melancholic, the same vast notions dominate, and their miseries are the most abject which have ever befallen men. In the further progress of these cases, attacks of wild excitement—of homicidal fury, for example—now and then occur. The physical failure proceeds apace with the mental. As the motor and mental centres of the hemispheres and the white matter undergo the granular and atrophic degeneration, the difficulties of speech continue, words are forgotten and omitted from the speech, the tongue and lips tremble more and more, and the paresis of the extremities gives rise to a peculiar, shambling gait. Inequalities of the pupils, impaired vision and hearing, excite hallucinations connected with these senses, which participate in the delusions of grandeur now uppermost in the feeble mind. Thus with a condition of dementia, and paralysis, most obvious to all, these unfortunates have an aspect of gratified vanity, feel equal in mental power to the greatest names in history, and have the strength of giants. If the ideas of melancholy predominate, the same contented expression, the same unprecedented misery, the same immensity of grief are expressed. Finally, the speech is unintelligible jargon, or a mere formless mumbling, the body is emaciated and paralyzed, and life is ultimately extinguished by respiratory paralysis and mechanical pneumonia, if not previously ended by some intercurrent disease which, fortunately enough, frequently happens.

Notwithstanding that dementia paralytica is often an inherited malady, it may be produced under conditions which determine cerebral exhaustion. For the benefit of those of our readers engaged in study or arduous mental toil of some kind, it may be stated that such subjects are not given to this malady. Besides heredity, the trinity of evil causes are venery, syphilis, and alcohol. If these combine with heredity, the danger of producing the malady is proportionally great. As regards heredity, dementia paralytica must be regarded as the offspring of the family of neuroses rather than as the transmission of a special malady. The neurotic constitution is one from which any form of nervous disorder may spring—the peculiar direction taken by the inherited tendency being determined by the conditions surrounding the subjects of the inheritance.

The timely recognition of dementia paralytica is

of the utmost importance, not so much from the therapeutical point of view as the moral and social. The condition of such subjects must be understood in time to prevent the outbreaks to which they are liable; to prevent the complications growing out of extravagant ideas and the waste of property; to prevent the family estrangements and miseries of atrophied or forgotten affections and family ties, and to obviate the various social and business troubles produced in the circle of a man's relations who has become the unfortunate victim of this terrible disease.

Thus far the treatment of this fell disease has not been successful. Rarely, cases convalesce and are restored finally to their families and to society. In many examples of the disease remissions take place very unexpectedly, and a cure seems about to result, but after a time the symptoms become more aggravated. These facts, however, should stimulate the profession to greater efforts to find a curative agent. A few years ago Dr. Crichton Browne, of the West Riding Asylum, announced some very promising results from the administration of physostigma, but they have not been confirmed by others. Phosphorus and cod-liver oil and the phosphites and phosphates have been used with apparently good effects. We are yet, however, far from a curative remedy, and hence he who contributes it will confer an immense boon on the human race.

THE CLINICAL TEACHING OF OBSTETRICS.

THE recent trouble created by the action of a member of the obstetrical staff of one of our large hospitals, in bringing into the amphitheatre a patient in labor, and delivering her with the aid of forceps in the presence of the class, illustrates very well the manner in which many excellent people are misled by sentiment in matters which should be viewed in the light of experience and of common sense.

Of course, there may be circumstances under which, in consequence of the condition of the woman, or on account of the surroundings of the lecture-room itself, such a procedure would be manifestly improper, and with these, either in this particular case or in general, we do not propose at present to concern ourselves. It may be taken for granted that they will be considered and respected by every careful and practised obstetrician.

With the view, however, which condemns such methods of teaching on account of the "exposure" and "humiliation" of the patient, we do decidedly and unequivocally take issue. Its advocates ignore, on the one hand, the usual condition and mental or moral tone of pauper patients, which, however much theoretical equality is preached, are unavoidable factors in all such cases; and, on the other

hand, forget the great benefits, present and prospective, which accrue to the community from successful and practical clinical teaching.

It is a fact which every lecturer of experience can substantiate, that when the necessary exposure is made with delicacy, and only to the required extent; when the explanatory remarks bear directly upon the condition or process to be illustrated; and when due regard is had to the comfort and safety of the patient, the latter rarely objects to being the subject of a clinical lecture. This is true, not only of obstetrical, but of all other forms of clinical teaching. The patient with typhoid fever, whose abdomen is carefully examined; the patient with venereal trouble, who, brought before the class with covered face, is inspected or interrogated; the patient with lacerated perineum, who, etherized in another apartment, is operated upon in the clinic-room; none of these objects, in the vast majority of instances, to the accompanying exposure, realizing, doubtless, the force of that professional instinct which extends to physicians and students alike, and which renders suffering humanity sexless and sacred.

Such patients in large numbers depend each year upon the charity of every great city, and the gratuitous labors of the most eminent medical men. It is but just that they should repay, so far as possible, the obligations under which they voluntarily place themselves. Clinical teaching—instruction given in the presence of the disease or of the process which is to be elucidated—has long since taken a front rank among the means of imparting medical knowledge, and has largely superseded the old didactic methods. To those colleges and hospitals, and to those localities where such teaching prevails, students are now coming in great numbers—literally in thousands—and add largely to their prestige, their renown, and their material wealth.

Among the multitude of women who suffer with the various ailments peculiar to their sex, a large proportion, perhaps the majority, can trace the causation of their troubles to some accident, delay, or abnormality of labor. It is true that parturition is a physiological process, but that only increases its importance by adding to its frequency as compared with pathological conditions. Certainly in our time, under the circumstances of modern civilization, it requires to be carefully and intelligently superintended or assisted. Every possible parent is directly interested in having the medical practitioners of the future thoroughly instructed in all its details and dangers. Whatever tends to this end tends to the relief of suffering, the prevention of disease, and the preservation of life among the women and infants of the present and of coming generations.

To allow a sentiment, praiseworthy in itself, but here misapplied and not participated in by those in

whose behalf it is evoked, to interfere with such a humanitarian work, is to substitute personal feeling or prejudice for that calm judgment, which, while strictly respecting all personal rights, keeps steadily in view the essential object of securing the greatest good for the greatest number.

In the case in question, Dr. Warder, one of the staff of the Philadelphia Hospital, having begun his morning clinic in the amphitheatre of that institution, on Wednesday, October 11th, was informed by his resident that a colored woman in the obstetrical ward had been in labor for nine hours, that the os was widely dilated, but that the head refused to engage, and was asked for instructions. He directed that she should be etherized, carefully covered, and brought on a stretcher to the clinic-room. This was done, the circumstances of the case were explained to the class, the forceps were applied, and the woman safely delivered and removed to the ward. She has since died of puerperal fever, but unfortunately such deaths are not uncommon in the obstetric wards, and no inference associating the circumstances of the delivery and the termination of the case is warranted.

The Hospital Committee of the Board of Guardians, a newly appointed and most excellent and efficient body, passed a resolution recommending to the Board the dismissal of Dr. Warder, on account of his action, but subsequently modified this, after receiving a unanimous protest against it from the Medical Staff, to a resolution of censure. This was submitted to the Board at their stated meeting, Monday, October 23d, and addresses were made by various members of the Medical Staff. It was clearly shown that no rule of the Board or of the staff forbade the procedure; that no additional risk had been incurred in either the removal or the exposure of the patient; that the application of the forceps was imperatively necessary; that puerperal fever had recently caused several deaths in the obstetric wards; and that the fatal termination of the case was clearly due to infection derived from the latter source. After this the resolution of censure was voted upon, and rejected by a vote of eight to four. In the light of all the circumstances and of the expert testimony, this action was so clearly right that it seemed unavoidable, but hospital boards are sometimes disappointing in these respects, and it is especially to be noticed and commended that two of the committee recommending the motion, convinced of its injustice by the arguments of the Medical Staff, were manly enough to vote against it.

It may be said, in conclusion, that this case is by no means an exceptional one. It has been the custom for years in all the large hospitals and schools on the Continent to give this kind of in-

struction whenever possible. Scanzoni at Wurzburg, Martin at Berlin, Braun and Spaeth at Vienna, and Dubois at Paris, have demonstrated clinically the use of the forceps, version, craniotomy, and other obstetrical operations before large classes. In New York, Isaac Taylor and Fordyce Barker at Bellevue, and Gillette at the Charity Hospital, Reamy at Cincinnati, and White at Buffalo, have done likewise, and in the Philadelphia Hospital itself the late Dr. Parry, one of the most esteemed and lamented, and one of the most conservative of Philadelphia obstetricians, has used the same room for the same purpose. Dr. Warder himself on a previous occasion, and without censure, had delivered a woman in the amphitheatre. No rule of the Board or of the Medical Staff forbade it, and no evidence was offered that evil resulted from it.

We have already given the general reasons applicable to this as to all similar cases why such teaching is greatly to be desired by the profession, the community at large, and particularly by poor women, who, in truth, are the greatest gainers by it, as they are the greatest sufferers on account of its neglect.

POST-GRADUATE INSTRUCTION.

In a recent editorial based upon the proposed establishment of a school for the instruction of graduates in medicine, the *Medical Record* takes occasion to claim for New York, which it modestly alludes to as the "acknowledged medical centre," the priority in this kind of teaching, and then very ably and properly calls attention to the importance of the subject. The question of local pre-eminence, considered from a medical standpoint, may safely be dismissed as one not to be profitably discussed or satisfactorily solved. Possibly Philadelphia, with the oldest and largest medical schools of the country, with their long list of alumni who have attained world-wide celebrity; or Boston, with its time-honored University, among the first to adopt and to sustain at great pecuniary risk the more advanced methods of medical education, might be thought to have claims in this direction; but they speak for themselves.

Far be it from us to decry or in any way to depreciate the admirable colleges, distinguished teachers, and large clinical facilities which give to New York such advantages, for all forms of medical instruction. We are each of us interested directly and personally in any attempt to elevate the general standard of professional attainments in this country, and particularly in any effort which will enable the hundreds of practitioners who, having graduated with imperfect preparation for the heavy responsibilities of their profession, having had no experience in the use of instruments of precision, having possibly never listened to a heart-murmur or felt the

crepitus of a fractured bone, to supplement these deficiencies and to acquire at least the special knowledge which they have found themselves most in need of. Individual courses designed to furnish this kind of instruction have for a long time been given at Harvard, at Bellevue and other New York schools, and at the Jefferson Medical College and at the University of Pennsylvania. More than a year ago at the latter institution they were organized into a separate curriculum with special fees at a reduced rate and with the almost entire substitution of clinical for didactic teaching, and have been markedly successful. The "poly-clinic" which is about to be put in operation in New York differs only, as we understand it, in not being connected with any existing medical school, and is deserving of the warmest support and encouragement.

We can all afford, without regard to questions of locality or of priority, to further any enterprise which aims to place within the reach of every hard-worked physician an opportunity to improve himself with the least expenditure of time and money. Such men do not need or desire to sit again on the benches and listen to lectures upon general questions of medicine. They have discovered their weak points by hard experience, often distressing to themselves, sometimes disastrous to their patients, and are impelled to remedy them as much by a conscientious wish to be thorough and capable of doing the greatest good as by any other motive. In whatever part of the country and under whatever auspices, such enterprises, when conducted by competent men, should command the hearty sympathy of the profession.

VARIABILITY IN THE STRENGTH OF THE ACONITIAS OF COMMERCE.

IN the issue of Squibb's *Ephemeris* for September, we find an exhaustive research by the accomplished Editor, on the various kinds of aconitia to be found in commerce. He refers to four specimens: To an ordinary commercial specimen of unknown source; to two prepared by Merck, of Darmstadt, and one by Duquesnel. The last mentioned was the only crystallized preparation. The relative strength of these four specimens of aconitia, as compared with one grain of good aconite root in powder, is as follows:

One grain of the aconitia of unknown source, was equal to one grain of the powdered root; $\frac{3}{8}$ grain of Merck's ordinary aconitia is equal to one grain of the powdered root; $\frac{1}{8}$ of Merck's ordinary aconitia from *A. ferox* was equal to one grain of the powdered root; $\frac{1}{11}$ grain of crystallized aconitia was equal to one grain of powdered root.

The test recommended by Squibb is the physiological one of taste, which he regards as superior in

delicacy and vastly more readily applied, than any chemical reaction. If a preparation of good aconite root is placed on the tongue, in a short time a peculiar sense of tingling and numbness is felt at or about the point of contact. By having solutions of definite strength to bulk, it is perfectly easy to apply this test with certainty. The quantity of the preparation necessary to produce the reaction, and the time in which it is developed, are the points to be compared. As a result of his investigation, he concludes that a "well-made fluid extract of aconite root, made by repercolation with alcohol alone, from good root, is the best and only preparation needed."

Squibb seems inclined to regard aconitia as the only alkaloid of *Aconitum napellus*. *Napelline*, which has lately been brought forward, as our readers will probably remember, is therefore a decomposition product produced by the splitting up of aconitia, during the process of extraction. The alkaloid, known as *Pseudaconitine*, obtained from *Aconitum ferox*, is different from the aconitia of *A. napellus*. These facts afford additional reason for adopting the suggestion of Squibb, to obtain for medical uses a well-made tincture or fluid extract of good aconite root.

SANITARY INSPECTION OF SEA-SIDE RESORTS.

"In time of peace prepare for war" is an adage of the statesman, and the New Jersey Board of Health evidently believe it to be equally true in sanitation. Accordingly, they have begun now a sanitary inspection of the sea-side resorts which line almost the entire Atlantic coast of the State.

None too early have they done so. Long Branch, Seabright, Ocean Grove, and other summer resorts have obtained unenviable notoriety during the past year by their cases of typhoid and typho-malarial fevers. The soil of the whole Atlantic border of the State predisposes to a bad sanitary condition. It is so porous that almost so soon as the population of any mushroom town has grown big enough to have a post-office, the lots have shrunk to a size that endangers the well-water either from the owner's own or from his neighbor's privy-well. Even if this be not the case, the soil itself soon becomes so saturated with decaying filth that it is a serious source of danger. Until, then, a water supply by expensive "water works" and a disposal of sewage by a well-planned sewerage system are both in operation, every year must add to the dangers to health and life. All this too, be it observed, in addition to the many defects in the drainage of the individual mammoth hotels—defects which, even in such wholesome spots as the White Mountains, may develop typhoid and other equally dreaded forms of disease.

Every summer Philadelphia and New York pour

forth upon the Jersey coast an almost heedless multitude, like the locusts of Egypt for numbers, and each year the crowd is increasing, both in number and in length of sojourn. The Board of Health, acting in the interest of both the hosts and their patrons, have begun a needed work. Not one of these resorts should escape a thorough overhauling, both in the general municipal hygiene and in the local arrangements. The summer visitor is worth more to New Jersey than any other crop. Let heed be taken lest the crop fail.

WHILE on New Jersey matters, let us call attention also to the spurious economy of the town of Paterson. Following a smallpox "scare," the town established free vaccination, as was most judicious; but instead of procuring a reliable virus, they obtained it from a very doubtful source. Fortunately, no bad virus seems to have been furnished, but only a worthless article. But none the less will it probably cost not a few lives since smallpox has again appeared, and it will involve more expense than if vaccination had been well done at first, for now it has all to be done over again.

SOCIETY PROCEEDINGS.

AMERICAN PUBLIC HEALTH ASSOCIATION.

*Tenth Annual Session, held at Indianapolis,
October 17, 18, and 19, 1882.*

THE Tenth Annual Session of the American Public Health Association at Indianapolis, Ind., was opened on the morning of October 17th, the PRESIDENT, PROF. R. C. KEDZIE, of Lansing, Mich., being in the chair. About sixty members were present. After prayer by Rev. E. H. Bradley, the first business brought before the Association was a report presented by DR. GHON, of the Navy, from the Committee on

A NATIONAL MUSEUM OF HYGIENE,

It announced the establishment of a sanitary museum at Washington, under the direction of the Surgeon-General of the Navy, who obtained from Congress an appropriation of \$7500 for that purpose, and recommended the appointment of a permanent Committee on the National Museum of Hygiene, to be the medium of communication between the Surgeon-General of the Navy and the Association. In the course of the report it was stated that it was not proposed to make the library a large collection of unread books, the only use of which would be the production of a huge catalogue. Upon this Dr. Billings remarked that the language seemed uncalled for, and had probably been used inadvertently. He hoped that in forming the proposed museum and library it would not be considered expedient to attack other departments of the Government, and especially the Library of the Army-Medical Department. The Library of the Surgeon-General's office at Washington already possessed all books and journals pertaining to Hygiene, but it would be very glad to see other libraries do the same. Upon this the offensive clause was at once stricken out by Dr. Gihon, and the report thus amended passed without dissent.

The next business was action upon several

AMENDMENTS TO THE CONSTITUTION,

which had been proposed at previous meetings. The first of these amendments provided for the division of members of the Association into active and associate members. The active members form the permanent body of the Association, and are to be chosen with special reference to their acknowledged interest in sanitary science, and to the practical applications of the same. The associate members were to be elected only for the year for which they are proposed, and to have all the privileges and publications of the Association, except that they are not entitled to vote.

DR. BILLINGS moved the passage of this amendment, saying that it was the result of careful deliberation among the older members of the body, and was believed to be essential to its future prosperity and success. Under the constitution, only those known as sanitarians could be admitted to membership, and it was not desirable that this should be changed, if the dignity and influence of the Association were to be preserved.

The first paper on the day's programme was that by DR. HORATIO R. STORER, of Newport, R. I., on

THE NEWPORT (EDINBURGH) SYSTEM OF SANITARY PROTECTION.

Dr. Storer briefly refers to the first conception of the new principle in sanitation termed "protection," which is based on individual organization made collective upon the principle of mutual life insurance, by Prof. Fleming Jenkin, of the University of Edinburgh, in April, 1878, and its immediate introduction into this country, at Newport, R. I., in November of the same year. Four years have now elapsed since the commencement of the Newport experiment, now such no longer. The system had early been successfully copied at Lynn, Mass., and subsequently at Trenton, N. J., Brooklyn, Savannah, Montreal, and other cities and towns. The Newport Association from the outset had labored first, foremost, and all the time for a city board of health, distinct from the aldermen. As yet its efforts had been unsuccessful, but the local public sentiment had been so enlightened and elevated, through constant agitation of the subject, and so great a moral pressure had been brought to bear upon the city from without, through the daily and professional press of the whole country, that not only was the special change that had been desired now close at hand, but, with clearer views of the public need, there had arisen a demand for other municipal progress, general and far-reaching in its scope.

Detail was then given of certain measures employed by the Association for insuring complete inspection of the houses occupied by permanent residents and transient visitors, and a digest of the public and private work accomplished during the past year. The charter of the Association is also given as a guide to similar bodies, it having already proved a protection against annoying suits at law. There is also appended in addition the report rendered to the Association upon the dangers of impure ice, by Professors Pumpelly and Hills, of Harvard University, and Dr. Storer, which has already received from the greatest of living English chemists, Mr. E. Frankland, of London, his unqualified praise. The source of the whole ice supply of Newport was found polluted by the overflow of several cesspools, and the experiments made by the chairman of the committee proved most conclusively that during the congelation of water its impurities are collected together, concentrated and intensified in the resulting ice. The association therefore enjoined upon the Newport Ice Company to either protect its pond or discon-

tinue using it. The former course was very sensibly adopted, by the construction of an expensive intercepting sewer, to the very great advantage and enhanced safety of the whole city of Newport.

DR. THAD. M. STEVENS, of Indianapolis, read a paper on

THE HISTORY OF HEALTH WORK IN INDIANA TO DATE, in which the organization of the State Board of Health was set forth.

The discussion of the papers was very brief, and at 2 o'clock the Association adjourned to 7.30.

EVENING SESSION.—The Association reassembled, and received addresses of welcome from Mayor Grubb and Governor Porter, after which the President, DR. R. C. KEDZIE, delivered the

ANNUAL ADDRESS.

Members of the American Public Health Association: Once more we meet in annual council to consider questions which intimately concern the weal—the literal wealth—of our common humanity. In this council political lines and sectarian differences are swept aside like the foam on some mighty river, while the current of the forces which tend to purity, to safety, to health and life of all who are exposed to pain, to sickness and death, moves on with the unswerving and resistless sweep of destiny. We come from different States and widely-separated communities, each with his individual ideas, cares, and anxieties; but all with a common purpose to subordinate personal preferences to the general good, and above and beyond all selfish interests, to place the welfare of the community.

But as we thus meet with clasp of hands and words of mutual welcome, there is a shadow on your faces as the thought continually obtrudes itself that we are not all here. Since we last met death has taken from us one of our brightest and best beloved—our President of one year ago. You had all observed with unspeakable pain the evidence that to him life was not to be long; yet when the news of his sudden death came, it brought a shock to us all. While his life was short, as measured by years, it was long when measured by the deeds done for the good of man. "That life is long which fills life's end," and who of us can show a brighter record of unselfish devotion to well-being of his race, than Dr. Charles B. White? As physician in the Crescent City, as President of the Louisiana State Board of Health, as Medical Director of the Auxiliary Sanitary Association of New Orleans, a city presenting more difficult problems to the sanitarian than any city within our borders; and, finally, as President of this Association, Dr. White manifested everywhere and at all times a devotion to the public weal, and a capacity to promote its interests, excelled by none.

Sanitary science includes everything that can prevent disease and thus promote the public health. The public health is not an entity apart and by itself, but is the aggregate of the health of the individuals of a community. Any means that will promote the public health, will correspondingly increase the well-being of the largest number of individuals. If the sanitarian is working for noble ends by unselfish means, let him not therefore suppose that he will be exempt from the imputation of sordid motives, or that he will at once be hailed as the benefactor of his race. Human nature resents the assumption of moral excellence. "Every man's work shall be tried by fire of what sort it is," and he who acts from motives that seem a rebuke to selfishness, will be subjected to the ordeal of a furnace heated sevenfold.

Dr. Kedzie then took up the question, Does sanitary science secure longevity, not by enlargement, but by the attenuation of life?

A French writer has wittily said, "The health which is secured only by constant watchfulness is itself a kind of disease." There is here a happy combination of wit and error which is characteristic of French genius, but the statement itself is only a travesty of preventive medicine. The man that removes known causes of sickness and death exhibits the same forethought on these vital subjects that is demanded in every successful calling in life. A prudent man will give to the protection of health a care corresponding to that bestowed upon the preservation of property, or any other good he may acquire or inherit; only as the possessions are of less value than life and health, and are valueless in their absence, he will give more heed to things of highest importance. "Wisdom giveth life," said the wisest of earth, and he is not to be accused of folly who prizes this gift of wisdom. The man who builds his house in such a way as to prevent the possibility of "a defective flue," and thus secures his household against nine-tenths of the alleged causes of fires, is not to be classed with the fellow who, mousing around at untimely hours, awakens you with the exasperating inquiry, "Don't you smell fire?" The man who prevents disease is not to be mistaken for the valetudinarian who spends life in dodging death.

When we look at the lower forms of life we find that under the guiding and fostering hand of man they have reached a degree of development and attained a length of life not reached in their natural state. This has been well pointed out by Dr. Jarvis in his article on "The Political Economy of Health."

Human life, as at present seen, is not like a goblet filled to the brim, to which any addition is to be compared to piling fluid upon fluid in unstable equilibrium, liable to sudden overflow, all the more imminent as the accumulation proceeds. It is rather a half-filled bucket whose staves are so imperfectly compressed by the loose-fitting hoops that leakage—not overflow—prevents further accumulation. The sanitarian seeks to tighten the hoops, and thus secure filling to the normal capacity, so that man may fill the measure of his days, and not be defrauded of the precious years of his earthly heritage.

Among the causes for hopefulness for the immediate future, I name the following:

1. Extension of the knowledge of the causes of zymotic diseases, such as charbon (or splenic fever) and chicken cholera in domestic animals, and of diphtheria in human kind. All infectious and contagious diseases must soon be brought into the same category, when we shall know and identify the specific cause.

2. The prevention of these diseases by extension of the method of inoculation. This has been done in some diseases of domestic animals. If by similar means measles, diphtheria, and scarlet fever can thus be brought under control, and priceless childhood be rescued from this trinity of woe, how many a Rachel, now weeping beside her childless cradle, will be comforted!

3. The discovery of the bacillus, which is the cause of consumption, by Dr. Koch, of Berlin, marks an epoch in the history of medicine. Tubercular consumption has been the opprobrium of medicine. It is the remorseless destroyer of our race, being the cause of one-seventh of the deaths of our race, and of one-third of the deaths in the active period of adult life. It has sown the earth with untimely graves. It is yet too early to say how much immediate benefit shall spring from this capital discovery, but any means which shall bring within our control, even remotely, this fell destroyer of our race, is full of promise. If science shall stretch forth only the hand of prevention, what a boon to our kind! If it shall finally reach forth the hand of healing and guard mankind from consumption

as effectually as she has saved us from smallpox, or the lower animals from splenic fever, what a shadow will be lifted from the face of our common humanity!

4. Another element of hopefulness is the world-wide interest now taken in questions of public health. In centuries past, history tells us of the gathering of œcumenical councils, where met the representatives from all the civilized world to consult on questions of momentous religious interest, and to decide upon the great affairs of the church. Modern times see the gathering of similar councils of equally widespread constituency to consult about questions of temporal salvation and conservation of the public health. What would the seventeenth century have thought of a world's health congress, with representatives from every nationality in Europe and America. The warlike races are beginning to ponder the question of Christ: "Is it lawful to save life or to kill?" and to suspect that to kill is only half of the duty of a great nation, and that to save life is nearly as important. It is certain that national bigotry has been compelled to give place to amicable restrictions and concert of action for restraining disease. The saviours of our race shall yet be as honored as its destroyers have been.

5. In our land the sky is bright with promise, the organization of so many State boards of health—and we greet with hearty welcome Indiana, who has lately joined this sisterhood of the order of mercy—so many State boards have been organized that now we count up to see how many States have no boards, instead of enumerating the number that have. The work of these boards has been silent as the light, but quickening as the sunbeams. Some State boards, like Illinois and West Virginia—may their tribe increase—have cleaned out the profane and ignorant crew who, for petty gain, would experiment and trade on the lives and health of men. The homes and the bedsides of the weak and suffering have been saved from the clutches of these harpies. Blessings on the law which holds the benignant shield of its protection over the suffering and sorrowing, shielding them alike from ignorant greed and artful cunning. The work done by all these State boards, in investigations of the relations of remote causes to the public health—moisture and dryness, heat and cold, ozone and electrical conditions, etc.—the dissemination of information on all these questions relating to public health, so that when some terrible epidemic fills a village with wild wailing, high above the din and clamor of grief rises a clear voice, demanding, in tones not to be silenced, who will tell us the cause of this, and how to remove it? So also the sanitary conventions enlist all parties in the discussion of questions relating to public health, and spread information on these literally vital questions—in short, enlist humanity in a crusade against disease, bearing aloft no blood-red battle-flag, but lifting up the banner with the white cross of health!

Other organizations in the interest of health without number have been formed—required by law, or voluntary in their organization, the jurisdiction confined to a city or village, or including a large territory. Some of these organizations have effected wonderful results, and their combined influence is beyond human calculation. Foremost in these voluntary organizations I place the Sanitary Council of the Mississippi Valley. Without funds or patronage, without authority to command a single individual, with no power save the high purpose and courage to do good, and the confidence which such qualities inspire, the council put down shotgun quarantine, and for the past two years has kept the valley of the Mississippi open to commerce and travel, but closed against pestilence.

Let us now turn the leaf and look at some of the discouragements.

1. There is so much to be done and so few to do. Lift up your eyes to the redemption of the world from avoidable disease and premature death, and behold the fields are white for the harvest, but the laborers are so few.

2. A few who profess to be reapers are wasters. They care little for the precious grain, but want the straw to make themselves a nest. With great volubility they point out the fact that the largest part of the harvest is straw, and insist that to waste so much good straw which will make them a nice warm bed, merely to save a little grain, is unconstitutional waste, and an invasion of reserved rights. This was to be expected. Eden had its serpent with his plausible suggestions of profit to be secured by wrong-doing. Christ found His Judas, whose eye was ever on the purse, and our own revolution had its Benedict Arnold, willing to sell out struggling right for personal profit.

3. A third cause of discouragement is found in what may be called the hostile indifference of Congress and the executive to the National Board of Health. The American Public Health Association and the Sanitary Council of the Mississippi Valley were active in securing the organization of the National Board of Health. Both the Association and the Council are firm believers in the need—aye, the vital necessity—for a National Board of Health, whose jurisdiction shall be continuous with the national boundaries, backed by national authority and sustained by the national purse in its holy warfare upon communicable and preventable disease. State's rights may glitter and splutter upon trivial questions of politics, but disease will not pause at State lines nor halt at municipal boundaries. When destruction takes on winged form and comes floating on the very winds to lay waste our heritage, then we want some power whose jurisdiction shall be as wide-reaching as the wings of the destroyer, and shall command every force and resource requisite to withstand the invading foe. Look at the situation. Smallpox has been pouring in with the flood of European immigration, and but for the timely action of the National Board of Health, and the efficient aid of a few State boards of health, the Northwest would have been one widespread hospital for smallpox, and the commerce of this vast region closed for a time. Yellow fever has been flickering like the baleful fires of the tomb along our Gulf borders, and lately has blazed up into an epidemic, destroying life, wasting large communities with sickness, and crippling the commerce of our gulf coast—inflicting a money loss exceeding tenfold the entire cost of the National Board of Health, to say nothing of the suffering and death thus entailed.

When we look to the future the prospect is not reassuring. The same destructive agencies will continue to work in the future as they have in the past. When we turn our eyes to the East we find additional cause for apprehension. Cholera has roused up from its lair in the jungles of India; is now laying waste the islands of the Indian Ocean, and will soon start on its sweep westward to lay waste Europe, to charge across the stormy Atlantic, and, like its predecessors, to die out in the valley of the St. Lawrence or along the banks of the Mississippi. Is this a time to withdraw the watchmen who guard the public safety, to call in our trusty picket line, and hope to meet the destroyer with the *fulmen brutum* of States' rights, or the guerilla warfare of isolated municipal action.

The painful conviction abides with us that a fearful blunder has been made in thus crippling the National Board of Health, and that we have been guilty of the folly of changing front in presence of the foe.

We thus see that light and shadow alternately flit

across our landscape, but the light grows stronger and the shadow less sombre. But we should remember that, whether in sunshine or in shade, the landscape still remains. In health or in sickness, in pleasure or in pain, the race moves on forever, keeping even step with the noiseless footfalls of time; that whatever we may contribute towards improving the condition of our race will be a permanent addition to the welfare of our kind, while our errors and mistakes, like dead leaves and useless chaff, will be mercifully buried in our graves. We are now painfully and wearily sowing the seed, but the generations to follow us shall reap the joyful harvest. Because we are only sowers, and because we shall never thrust in the sickle of the reaper, let us be only the more careful to scatter precious seed. Though our eyes shall never behold the sheaves of that far-off summer-time, our ears may yet catch the echoes of their harvest song. Listen to the refrain: "There shall be no more thence an infant of days; nor an old man that hath not filled his days, for the child shall die an hundred years old." In the ages past how large a proportion of human beings were ushered into existence whose life was measured not by years or months, but were literally infants of days. By the advancement of sanitary science and the stricter enforcement of sanitary law, the proportion of "infant of days" has been steadily diminished, and a constantly increasing number pass on into adult life. Year by year and age by age a smaller number die in infancy and a larger proportion pass forward to productive manhood. With wider knowledge and more general enforcement of sanitary law, this diminution of infant mortality and expansion of human life will go forward with ever-increasing momentum till life will attain its normal limits, and every child shall reach his hundred years. Not only will life be extended, but the long life will be full of joyful activities, and man shall fill his days. For this we toil and hope. God speed the day!

OCTOBER 18TH.—SECOND DAY.

On motion of the Executive Committee about one hundred and fifty persons were duly elected to active and associate membership.

A resolution for a standing committee of five on the National Museum of Hygiene was adopted.

DR. RAUCH, of Illinois, read a paper entitled

OBSERVATIONS IN REGARD TO THE RELATIVE SIZE OF THE LIVER AND SPLEEN, AND THE NORMAL TEMPERATURE IN TEXAS CATTLE,

by DR. JOSEPH R. SMITH, Surgeon United States Army, and Medical Director of the Department of Texas. The paper was a long and elaborate one, and, was mostly taken up with the record of exact observations. The author thinks no danger to northern cattle can result from the transportation of Texas cattle, apparently healthy at the commencement of their journey north.

Remarks were made by Drs. Becker, Ryan, and Hunt. Their idea seemed to be that Texas cattle were peculiarly subject to Northern climatic influences, malarial and otherwise, diseases being developed which had shown no evidence of their existence in Texas.

DR. ELISHA HARRIS, Secretary of the New York State Board of Health, offered a resolution instructing the Committee on Cattle Diseases to consider the pathological and etiological conditions of Texas cattle disease. Drs. Smith and Harris were added to the Committee on Cattle Diseases, and Dr. Smith was requested to continue his investigations.

DR. E. E. HOLMAN, of Chicago, read a paper on

STOCK TRANSPORTATION.

He stated that stock in transit are often allowed to go one hundred hours without food and water. Another

species of cruelty is practised in the crowding of sheep or hogs into cars with cattle, to fill up the interstices between the legs of the latter. The story of the sickening cruelties practised on animals in transportation was almost incredible. The writer thought it almost, if not quite as bad, to kill these bruised, maimed and crippled animals, for food, as to use those that had themselves died under such treatment. No amount of cooking is adequate to restore diseased tissue to health. The speaker recommended the use of stock-cars which will allow the stock to lie down, and also the use of refrigerator-cars to transport meats. The greatest point to be gained is the education of the consumer up to the point of demanding healthy meat.

DR. T. P. WILSON, of Ann Arbor, Mich., read a paper on

LIFE ON WHEELS.

He estimated that from 1,000,000 to 1,500,000 people are on the cars in this country daily. Railroad travel is not necessarily perilous and uncomfortable. The first want is fresh air. Fifty or sixty persons in a car exhaust the oxygen in a car in a few minutes. Sleeping-cars are a little worse, and the lower berths are worst of all. The heating arrangements are defective, and the drinking water from tanks in cars is bad.

DR. A. N. BELL, of Brooklyn, corroborated the author's statement in regard to the filthy and impure water used on trains. He thought the great reform needed in cars was to abolish the upholstered furniture. The heavy plush seat-covers and heavy woollen curtains catch and retain seeds of contagion.

DR. MILLS, of Port Huron, criticised the combination of water tank and water closet used on some cars.

DR. ELISHA HARRIS, Secretary of the State Board of Health of New York, read a statement of the work of the Board.

DR. JAMES E. REEVES, Secretary of the West Virginia State Board of Health, made a statement of sanitary progress in that State, claiming that it possessed one of the most perfect sanitary systems in the Union. The Board does not confine itself to sanitary work, but also controls and regulates the practice of medicine in the State. There are established three classes of physicians: First, those who are graduates of reputable medical colleges; second, those who have been engaged in continuous practice for ten years; third, those who come before the Board for examination. It is to the medical profession that the people must look for sanitary reform, and only by such very great authority as is given the West Virginia State Board, can such reform be made effective.

DR. RAUCH, Secretary of the State Board of Health of Illinois, cheerfully allowed that the work of the West Virginia Board of Health was the best in the Union.

DR. SAMUEL W. ABBOTT, of Wakefield, Mass., then read the following paper on the

USES AND ABUSES OF ANIMAL VACCINATION.

The author's object was to present for consideration the advantages which are offered by animal vaccination in preference to the older, and, until the beginning of the past decade, the more common method of vaccination by humanized virus. He also referred to some of the abuses to which animal vaccination is liable.

Until the occurrence of the great epidemic of small-pox in 1871-1873, throughout the United States, vaccination had been performed almost exclusively with humanized virus. There were some few exceptions. During the late war of the rebellion, large quantities of crusts were supplied to the surgeons of the army for the purpose of vaccinating soldiers, these crusts having been obtained by the process of retrovaccination, *i. e.*, the vaccination of cattle with humanized lymph. This

practice had the sanction of the medical department of the United States Army, and was doubtless as efficient as any vaccination with crusts. But this mode of propagation failed to win public confidence, doubtless in consequence of a belief in the transmission of human diseases through the cow to man. I am not aware, however, that any facts have ever been adduced to substantiate such a hypothesis. This process of retrovaccination has also been practised to a considerable extent in other countries, as in Bavaria, from 1818 to 1825, and also in the island of Trinidad.

Humanized virus has been the rule from the days of Jenner until the successful propagation of virus from the well-known case of cowpox which occurred at Beaugency, France, in 1866. The introduction of this practice into America was mainly due to the efforts of Dr. Martin, of Roxbury, Mass., who imported animal virus in 1870 and began the successful propagation of vaccine virus from that time in an uninterrupted series of animals. A new era in the mode of virus production was thus introduced.

In early years vaccine virus was obtained very much after the manner in which our ancestors occasionally procured fire for household purposes before the advent of friction matches. Application was often made to some fortunate neighbor who had carefully preserved his burning coals from day to day. So the country physician often drove away to his professional brother's office in a neighboring village, who had also kept alive his stock of virus by arm-to-arm vaccination of infants, or perhaps by means of a bit of crust carefully stowed away in a corner of his office-desk for future use.

Gratuitous distribution of virus was a common event at the meetings of district or county medical societies. Within the past decade the entire process of vaccination and the general supply of virus in the United States has become revolutionized in consequence of the rapid increase of population, the immigration of hordes of unvaccinated people, the introduction of animal vaccination, and various minor causes, so that, what was once a matter of gratuity or accommodation, has become a regular traffic; the physician purchasing his virus directly from the propagator or from some middle man, usually a druggist, who, to use a technical term, "carries" the article as a part of his stock.

It is safe to say that nine-tenths of all the virus employed in the United States at present is obtained in this manner, by purchase, and also that at least as large a proportion is of animal origin.

Hence, in accordance with the usual laws of supply and demand, certain parties, usually physicians, have undertaken to furnish virus in such quantities as may be required, by the constant propagation of the same in and through bovine animals, purchased or hired for the purpose.

The practice of animal vaccination is reasonable, and is preferable to any other mode. It is also a matter of the highest importance that every safeguard should be afforded, both by legislation and by private practice, to render its performance perfectly safe and efficient.

Reasons for its use:

The impossibility of obtaining a supply of virus from humanized sources in sufficient quantity and with requisite promptness for use in times of epidemic.

The possibility of the transmission of other diseases besides vaccinia, through the inoculation of human vaccine lymph, was for a long time denied by the medical profession, with but few exceptions. Then came a period of doubt and of hot discussion, but at the present day the evidence of such a possibility is too overwhelming to admit of reasonable denial. The advocates of humanized virus are divided in their opinion upon this subject, but the careful instructions

which all enjoin as to the selection of healthy vaccinifers, and also to the importance of cleanliness, are only too certain evidence of an unwilling admission of the fact.

It has been alleged by advocates of humanized virus that there is no danger of syphilitic inoculation if blood is not conveyed together with the lymph or serum. But who is to decide as to the presence or absence of blood, and what is the so-called vaccine lymph itself but a portion of the blood, plus the unknown quantity called virus? Vaccine lymph may be colored in varying degrees, from a deep red down to an almost colorless fluid, in which no trace of blood may be visible to the eye. The trained microscopist may, nevertheless, find blood corpuscles quite abundant. But it is impossible to find a microscopist at one's elbow for immediate service at every vaccination.

The introduction of vaccination with direct bovine virus obviates the whole objection, and also disarms the opponents of vaccination, in general, of the most potent argument thus far urged by them.

Transmission of Bovine Diseases.—The hypothesis of the transmission of bovine diseases has been urged. If this doctrine were tenable, facts would have been adduced in its support, for the vaccinations with bovine virus in the United States alone, within the past ten years, may be estimated at not less than three or four millions.

A careful search in the records of vaccination and of anti-vaccination literature, fails to reveal a single authentic case of transmission of genuine bovine disease, other than vaccinia itself.

In regard to the matter of *efficiency* or potency of bovine virus, I am aware that a certain superiority has been claimed for it, over humanized virus, and while I have not observed any preëminence of this sort, I can confidently assert, after an experience of twenty years (ten with humanized and ten with bovine), that the action of bovine virus is at least of equal potency, and also identical in its mode of operation.

The results of observations recorded in the medical journals during the past year or more, are widely dissimilar. A few observers record a superior efficiency for bovine virus, a greater potency, and a larger per cent. of effective vaccinations. A larger number still record an inferior potency, and a smaller ratio of effective vaccinations. In some cases a total failure is recorded. I regret to notice that nearly all of these observations show a total disregard of the essential conditions of scientific observation. All such observations should be conducted under conditions which admit of no possible doubt. On the contrary, one observer reports his virus as purchased from a reputable dealer, another from a reliable druggist. Another observer does not state whether vaccinations were primary or secondary. Scarcely any observer could state the exact age of the virus which he used (a matter of the greatest importance), and in some instances could not confidently affirm that he was using vaccine virus at all, instead of some fictitious product.

On the contrary, the testimony of physicians who vaccinate with virus of their own propagation is uniformly that of a high ratio of success, usually from 95 to 99 per cent. in primary cases. The reasons are obvious—the propagator of virus knows its source and its age, and hence attains a uniformly high rate of success in vaccination.

The Importance of a Perfectly Pure Standard of Animal Virus.—Care is necessary in the selection of animals. They should be healthy, and in good condition as to flesh. They should be well fed and clean, and should be housed in dry, clean, airy and comfortable stables, and should be free from disease of every sort, including cutaneous eruptions.

The age of the animal is a matter of importance. My own preference is in favor of adult cows. In earlier years I made this a matter of experiment, and vaccinated all ages from calves of a week old to adults of a dozen years. From these experiments I concluded that animals of a gentle disposition, in a good condition of flesh, with a rather thin hide, and from three to six years of age, yielded the best results.

The sex is also important. Virus will take as readily in bulls and oxen as in cows, and the vesicle may present as typical an appearance, and by actual experiment I find the virus equally efficient. The difficulty lies in the thickness of hide. This quality renders it almost impossible to obtain a sufficient flow of lymph for practical use.

Analogy would lead us to employ females. So far as I can learn by observation and inquiry, spontaneous cowpox (if the term be a correct one) occurs only in cows, and usually in those that are giving milk. Of at least twenty cases of natural cow-pox which I have inspected during the past eleven years, all occurred in milch cows, and I find this statement confirmed by the observations of intelligent farmers and drovers of cattle. The theory that natural cowpox is a rare disease has no foundation in fact, and only gives evidence of a neglect of careful observation of the habits of animals. One would suppose, from the extensive run of the term "Beaugency," that such a case is almost unknown in America, a land abounding in cattle, and annually exporting thousands to foreign ports.

Adulterations, Dilutions, and other Frauds.—The immense demand for virus created by the last two epidemics of smallpox which have befallen this country, has brought with it more or less of the frauds which are liable to all traffic, either in food, drugs, or other similar articles.

It is important, therefore, that adequate protection be provided in the case of vaccine virus, by the use of which so many of our population are protected from loathsome pestilence. Such protection should warrant purity above all things else.

Vaccine virus is collected for use and offered for sale in various forms.

1. Dried lymph collected and preserved for use upon ivory or bone points, bits of goose-quill, glass, and pieces of silk or thread. The latter are but little used.

The points and quills have been used largely throughout the United States for several years, and are the safest and most convenient forms for general use. These points, either of bone or ivory, are of various sizes and patterns, some with sharpened edges, to be used as a lancet for scarification. The quills are cut from goose-feathers, in pieces of an inch or more, the virus being collected on the convex surface. They have the economical advantage of subdivision.

Period of Activity.—It is the custom of most virus propagators to limit the warrant of efficiency to twenty days or three weeks, and considering the vicissitudes of weather, temperature, dampness, etc., to which it is liable in transit, this limit is sufficiently long, though it may become inert in a shorter time, and also may be found active after six weeks or more. In one case a whole year is reported.

Frauds.—From my own observation and that of others, it appears that certain modes of dilution and substitution have been practised in the use of vaccine lymph in this form.

The substitution of simple blood-serum for vaccine lymph. This has been alleged, and if so, I know of no possible mode of detection except by the test of use. As a substance for dilution there could be no possible motive for its use, except that of increasing the quantity of apparent lymph. The microscope could hardly be relied upon as a detective in this case.

Egg-albumen.—During the past winter the medical journals of this country have occasionally contained statements referring to the use of egg-albumen to a greater or less extent in the preparation of animal virus, and specimens of points have been shown me purporting to be prepared in this manner. One propagator has admitted their use, and defended it for certain reasons, namely: "That the ivory or bone point is somewhat porous, and hence requires a coating of albumen to prevent the vaccine lymph from being absorbed by the material of the point. Another, that the albumen is applied over the vaccine lymph as a protective agent to render it more durable. Without the least intention to impute the design of fraud to this special use of a foreign substance, I still believe it to be highly objectionable. My own experience shows that the practice is unnecessary for either of the reasons alleged. Pure vaccine lymph will retain its activity sufficiently long without such protection, and, if any lymph is absorbed by ivory or bone, there is certainly a sufficient quantity left upon the surface for practical use.

Again, the addition of such foreign substances would greatly deceive the purchaser, who would naturally suppose the liberal coating to be pure vaccine lymph, instead of a dilute solution of the same in egg-albumen.

Mucilage.—In 1872 a package of quills was brought to my notice, which were very small and pointed, and had upon the pointed ends a very thick coating of a substance which was almost insoluble in cold water, of brittle fracture, and totally inert for vaccination purposes. It had every appearance of mucilage of some sort of gum, and could not have been genuine vaccine lymph. I do not think that adulteration from this source would be difficult of detection, in consequence of the comparative insolubility of the gum.

Crusts.—This form of using virus is open to certain grave objections, to which the points and quills are not liable. The points are charged at a period when the lymph is clear and transparent, and free from pus or any foreign material, while the crusts are not removed for use until several days later. These few days are sufficient for the development of pus, which may often be noticed adhering to the under-surface of crusts as they are detached. In addition to the pus, various foreign substances are liable to become incorporated with the crust during the period of its formation.

In a fresh, normal crust, which I removed from a healthy cow September 29th, I detected the following elements or substances:

First, epithelium in abundance; second, lymph corpuscles; third, pus globules; fourth, fat globules; fifth, hairs; sixth, connective tissue; seventh, starch granules; eighth, fragments of organic material (dust of stable, etc.).

We find, therefore, a variety of elements entering into the composition of a vaccine crust which are extraneous to it, and all of them foreign to the special purpose of vaccination. Some of the constituents which have been proved, must naturally be liable to interfere with the action of the virus, and be productive of serious results. This statement is confirmed by the experience of several observers.

Dr. Wheeler, of Chelsea, Mass., reported a death from vaccination with a crust, and had also seen other cases of trouble following their use. He thinks vaccination with the crust more dangerous than with lymph.

Dr. Ayer, of Boston, reported that all the cases of trouble from vaccination which he had ever seen followed the use of crusts.

The late Dr. Comstock, of Middleboro, Mass., in a private letter to me in 1872, also related several cases of serious illness following vaccination with crusts.

I need scarcely refer to the use of crusts preserved in an aqueous solution. The very suggestion is revolting to any one who has the slightest knowledge of the laws of decomposition; and yet instances are on record of the use of such solutions, with disastrous results ensuing.

From the various records of analyses of crusts made by others, and also from my own examinations of their intimate structures, also from the results which occasionally follow their use, I have recently arrived at the conclusion that the use of vaccine crusts, and also all compounds manufactured from them—powders, solutions, etc.—should be abandoned *in toto*, and the use of vaccine lymph limited to that which is collected at the period of maturity of the vesicle, and dried immediately for use.

Capillary Tubes.—These are fine glass tubes, into which vaccine lymph is first drawn by capillary attraction, and the tubes are then sealed air-tight at each end. Glycerine is occasionally used for diluting the lymph, in varying proportions. Capillary tubes are used more generally in foreign countries than in the United States.

This form of using vaccine lymph is open to the grave objection, which is common to most organic fluids, of putrefactive change. Bacteria may be found in the lymph contained in carefully sealed capillary tubes in a very few hours after they are filled. Glycerine may possibly delay the change for a longer time, but will not prevent ultimate decomposition. In order to sterilize such a fluid by means of heat, it would be necessary to heat the fluid to such a degree as would also be fatal to the efficiency of the virus. The only safe mode of avoiding decomposition would be to collect the lymph under antiseptic spray, immediately after the puncture of the vesicle.

One writer, in advocating the use of capillary tubes, prefers them because "the lymph is always in a fresh state." If by fresh he means free from organic change, the microscope certainly does not confirm the statement.

In conclusion, I would urge the necessity of the highest standard of purity in the preparation of an article of such vital importance to the health of the republic, not only that the objections of the opponents of vaccination may be forever silenced, but also that the possibility of unfortunate results may be prevented, and the perfection of purity and excellence insured.

The discussion of this paper was made the special order for the afternoon session.

AFTERNOON SESSION.

DR. A. N. BELL, of Garden City, L. I., read a paper on *Sanitary Inspection*.

DR. BELA COGSHALL, of Flint, Mich., read a paper,

IS TUBERCULAR CONSUMPTION A CONTAGIOUS AND PARASITIC DISEASE?

Taking the ground that it is so communicable. He related many interesting experiments to show that cattle affected with consumption communicated the disease to the human race by the eating of their meat and drinking their milk.

The recent investigations of Prof. Bollinger, of the University of Munich, on the artificial production of tuberculosis as induced by the consumption of diseased milk, are of the greatest importance. He claims that the milk of such animals has a preëminently contagious influence, and reproduces the disease in other animals experimented on from that point of view.

Then if it be that consumption is a contagious disease, it behooves us as sanitarians to see that the great source of infection—the sputum of phthisical patients—is done away with by its immediate destruction;

thus preventing the germs being wafted with the air promiscuously about, endangering the health and lives of nurses and attendants. We should see to it that meat and milk infected with these parasites are not allowed to be eaten or become articles of commerce. He also discussed the question of its being a "parasitic disease," and related the wonderful discovery of Dr. Koch, of Berlin, who claims to have found the germ of the disease.

A paper on

COMBINED SEWERS DANGEROUS TO PUBLIC HEALTH,

by DR. J. W. COMPTON, of Evansville, was read by Dr. E. M. Hunt. He urges entire abolition of the combined sewers for storm water and the ordinary domestic sewage. The present system produces, he claims, foul air chambers, where bacteria are generated and typhoid fever bred. Very small sewers will answer for the carrying off of the actual foul sewage from houses.

The Association then passed to the special order—the discussion of the question of

VACCINATION.

DR. FOSTER, of Augusta, Ga., thought it unfortunate that bovine virus was the fashion at this time. He declared in favor of humanized vaccine virus. He has never been able to obtain over 60 per cent. of successful vaccinations from bovine virus. Bovine virus is unreliable. Often it fails to take, when humanized virus will do so. He thought bovine virus vaccination had its uses where there was a wholesale demand for vaccination. The long delay of bovine virus in developing itself is one of the objections to its use. He had never seen a case of vaccine syphilis.

DR. DEVRON had found the bovine virus very reliable. He had successfully vaccinated the babe at the breast of the mother having smallpox.

DR. BECKWITH had used both kinds of virus. He had had indolent ulcers and gangrenous sores developed from bovine virus. The demand last fall had been so great that the producers had overworked their animals. As high as 15,000 patients had been vaccinated from one cow. He advocated a law that would make the propagators responsible for the quality of virus sent out, and suggested that it might be necessary for the government to take charge of the production of vaccine virus, as in Belgium.

DR. E. L. GRIFFIN, ex-president of the Wisconsin State Board of Health, said there was some conscience among propagators, some honesty of purpose. He said cases of spontaneous cowpox were rare, but cases of spurious cowpox were common. He would deprecate the vaccination of cows over four years old. He believed both kinds of virus had their use. Animal vaccine must be accepted as a great boon to humanity. The question before us is to guard its propagation. Last winter the demand for vaccine matter was enormous. Every man fell into error. Virus was sent out that ought not to have been sent. Animal vaccine is just as good now as it was a century ago. Its propagation should be entrusted to skilled labor only, and this should of a necessity be enforced by law. He thought the per cent. of success from bovine virus would compare favorably with that of arm to arm. He expected from 90 to 95 per cent. of success from proper bovine virus. Want of skill in the physicians who use the points is a potent source of failure.

DR. HILLS, of Keokuk, Iowa, had found in public trials that there was 25 per cent. of failure with humanized virus and less than 10 per cent. with bovine virus. He had never heard of smallpox "wearing itself out."

The continuation of the discussion was adjourned until the next day.

EVENING SESSION.

DR. J. L. CABELL, of Virginia, President of the National Board of Health, presented the following report from that body.

The National Board of Health having been placed by the recent action of Congress in the anomalous and embarrassing position of a body charged with important and responsible duties, and yet deprived of the means of efficiently executing them, some of its members who had been appointed from civil life felt that it was incumbent upon them to consider what course of action on their part would best subserve the interests of the public health, placed in jeopardy, as they conceive, by recent legislation. In consideration of the fact that the Board of Health owes its existence to the efforts of this Association, and of the further fact that their own appointments were largely due to the recommendations of a committee of this body, they have decided to refer the question to the Association itself, and to this end have directed me to address a communication, as its presiding officer, setting forth a summary statement of the operation of the Board since its organization in 1879, which they desire to be placed on permanent record.

The occasion is specially adapted to a review of the work of the National Board by this Association, in view of the fact that the law under which the board has accomplished its greatest and most beneficent work—that of preventing the introduction and spread of infectious diseases—will lapse by limitation unless renewed at the next session of Congress. It is for the American Public Health Association to determine how far the National Board of Health has fulfilled its mission, and whether it is to be destroyed or supplanted by adverse legislation.

Dr. Cabell then proceeded to give a summary statement of the operations of the National Board of Health from the date of organization to the present time, consisting (1) of aid to State and local boards of health in the execution and enforcement of their rules and regulations to prevent the introduction of contagious or infectious diseases into the United States from foreign countries. (2) Aid to the same parties in maintaining sanitary inspection on the Mississippi River. (3) The inspection of immigrants with reference to the protection of the people of the United States from the introduction of smallpox by said immigrants. In connection with the above branch of the operation, Dr. Cabell cited the following passage from a report made to the Senate of the United States at the late session of Congress, from the select committee to investigate and report the best means of preventing the introduction and spread of epidemic diseases. In this report the following statements are made with the unanimous approval of the committee:

"The epidemic of 1879 at Memphis and New Orleans made its appearance before the National Board had been able to perfect its plans of prevention; though it is, in the opinion of the committee, doubtful whether that epidemic could have been prevented, as it is not certain whether it originated from germs of the epidemic of 1878 which had survived, or in fresh importation of the disease. But, under the rules and regulations adopted by the Board to deal with it, it was actually stamped out in New Orleans, and confined to the limits of Memphis; and, instead of the general demoralization and panic, with suspension of business, trade, and commerce, which pervaded the country in 1878, commerce and communication with the infected cities were regulated, not stopped, or even retarded to any considerable extent, and the general business of the country went on in its usual methods, and through its usual channels, without serious interruption. In-

stead of panic and alarm, confidence and a sense of security pervaded the country. The great transportation companies of the South, both river and rail, are unanimous in their approval of the action and methods of the National Board in dealing with such cases, because experience has shown that they give the necessary security against the spread of disease, without stopping, or retarding to any considerable extent, commercial intercourse. They have learned from their own experience that the certificate of the National Board of Health as to the sanitary condition of any city, or place, is accepted by other cities and States as testimony coming from a strictly impartial and well-informed authority, independent of all local interests or influences, commercial or otherwise. In the opinion of the committee, it has accomplished much, and is capable of accomplishing highly important results of great benefit to the country, results which can be accomplished by no other agency."

Dr. Cabell then gave a brief account of the proceedings of the International Sanitary Conference of Washington, and expressed his regret that although the delegates of the United States obtained most important concessions of international comity, the ratification of which would have been of the utmost consequence, Congress had not yet taken the first step to secure such ratification. Dr. Cabell also gave an enumeration of the various special scientific investigations which had been conducted under the auspices of the National Board, and cited the testimony of eminent authorities of Europe to show the value of such investigations with reference to their sanitary applications. After noticing certain charges made against the board, Dr. Cabell concluded as follows:

It will thus be seen that the national health organization, which the Association has been so largely instrumental in bringing into existence, is in some danger of extinction for the want of adequate support by the National Legislature. In view of this fact it is considered pertinent and proper to suggest that the members of this Association may do a most useful work in instructing their representatives in Congress as to the value of the work performed by the National Board of Health, and the indisputable necessity of more liberal appropriations to enable it to carry on this work with due efficiency. Without such effort there is danger of losing the ground gained in 1879, which if so lost now will probably not be regained for many years to come. In making these efforts it may be important to bear in mind the source and character of the hostile agencies combined to overthrow the National Board of Health. We may be permitted to refer to a few of them:

"1. The State Board of Health of Louisiana, backed by a portion of the press of New Orleans, in its repeated allegations that the National Board of Health has interfered with and obstructed the local authorities, instead of aiding them, as required by law. The interference consists in the National Board establishing an inspection service within the limits of New Orleans, being induced to take this action in compliance with the request of the health authorities of the Mississippi valley States, including those of Louisiana itself. Nothing short of this will satisfy other communities having intercourse with that city, which would certainly be quarantined by its neighbors to a most inconvenient extent if it were not for the protection it derives from the certificates of the inspecting agents of the National Board.

"2. The powerful influence of the Treasury Department, which asserts a claim to the disbursement of all funds appropriated by Congress for the suppression of epidemics, and to the selection of its own medical officer, the chief of the Marine-Hospital Service, as its

agent in these operations, although an express provision of an existing Act of Congress repeals all previous acts conferring sanitary powers on that branch of the public service, and clothes the National Board of Health, which includes in its membership a detailed officer of that service, with all the power assumed by the general government in respect to quarantine and sanitary matters.

"3. As composed of medical men selected without regard to party affiliations, and wielding no political patronage, the Board finds no hearty support from politicians of either of the great parties of the country.

"In conclusion, we desire to say that, as the present membership of the Board was largely due to the unsolicited choice of the advisory committee of the Public Health Association, we abide its decision as to our longer continuance in these positions, preferring, if deemed consistent with the public good, to be relieved by the selection of others, who may, perhaps, command a larger share of public support.

"S. M. BEMISS,
"R. W. MITCHELL,
"T. L. VERDI,
"J. L. CABELL,
"STEPHEN SMITH,
"H. A. JOHNSON."

On motion of DR. EARLY, of Kentucky, a vote of thanks was extended Dr. Cabell for the paper just read.

The Secretary then presented the following resolutions, which had been prepared by the Executive Committee in view of Dr. Cabell's report, referred to the Advisory Council, and again referred back to the Executive Committee for revision:

THE ASSOCIATION'S RESOLUTIONS.

"Resolved, That this Association has listened with great interest and satisfaction to the analysis and detail of the work accomplished by the National Board of Health, as furnished by the President of the Board; and that we commend its careful perusal to all upon whom, as legislators or sanitarians, devolves the care of the public health, not only as showing the scope of its faithful and efficient administration, but as suggesting and illustrating the permanent demand there is for a sustained national organization of this general character.

"Resolved, That there is a work to be done by such a board which cannot be done by any local or State board, and which is not, and cannot be, adequately represented or fulfilled by any other branch of the national service, as illustrated in its inspections and inquiries into special conditions so serious as to be national rather than local; in its dealings with yellow fever and smallpox; in its plans for consular health bills from foreign ports and refuge stations for a wide coast range; in its internal care over river and railroad transportation; in its investigations into malaria and other widespread causes of disease; in its valuable scientific and practical inquiries into the causes and courses of epidemics; in its comparisons of statistical facts, and in its widespread distribution of information most intimately affecting the vital conditions of our whole population.

"Resolved, That, while each State and each division of national service may contribute much aid in their respective spheres, we view with regret any curtailment of the functions of a board so constituted as to represent and unify the health interests of the entire Nation.

"Resolved, That, we counsel the National Board to continue all the work possible under its present restricted appropriations and await with confidence the extension of its powers of usefulness, and that appreciation of its work for the past and its necessity for the

future, which can but result from a calm and careful estimate of the safeguards requisite for national health and prosperity.

"Resolved, That the Advisory Council of this Association, representing, as it does, the sanitarians of the various States, be directed to use all laudable efforts to place before the President of the United States and Congress at Washington, and before members of Congress in their several States, the very great importance to the welfare of this country of such action by the United States government as shall increase, to the fullest extent, the means and powers of usefulness of the National Board of Health.

"Resolved, That so long as the United States government confines its maritime and inland quarantine service to the aiding of State and local boards of health, it is essential, for the best results, that such aid shall be through channels most generally acceptable to State and local boards of health, whose co-operation is requisite; and we sincerely believe that the National Board of Health, is the channel most generally acceptable.

"Resolved, That confining the work of the board to cholera, yellow fever, and smallpox is believed to be in the highest degree injudicious. It should have the full powers for investigation of all preventable diseases conferred upon it by its constituting Act, and be granted the funds necessary for this purpose, and this should be done irrespective of the action which may be taken with regard to quarantine.

"Resolved, That the members of the American Public Health Association hereby pledge their individual co-operation in endeavoring to secure such national legislation as shall insure to the National Board of Health such material aid as may be needed in carrying out, with the greatest efficiency, all measures pertaining to the interests of public health.

"Resolved, That the president, vice-presidents, and secretary of this Association be charged with the duty of securing the complete presentation to the authorities at Washington of the full influence of this Association in favor of properly and permanently sustaining the National Board of Health.

"Resolved, That the address of the President of the National Board of Health, together with these resolutions, and such other papers or resolutions as relate to this subject, be printed at once in pamphlet form, to the number of one thousand."

DR. EARLY thought no physician could fail to realize the importance of the situation. He was indignant that a government like ours should say to the American people: "We have so little regard for your health that we propose to take from you every safeguard which the National Board of Health has hitherto devised." He offered an additional resolution, strongly indorsing the action of that Board and denouncing the opposition thereto, which was favorably reported by the Executive Committee.

DR. DEVRON, of New Orleans, a member of the Citizens' Auxiliary Association of that city, said his association would see with fear the abolition of the National Board.

MR. COLTER, of Chicago, mentioned the probability of our having cholera in the country within the next few months. What could be done in that case without the National Board of Health? The National Board works in unison with the State boards, and without it there could be no unity of purpose among them. Every member should work for this Board as an individual.

DR. CANTWELL, of Alabama, said the entire sentiment of his State would support these resolutions.

DR. THORNTON, of Memphis, said his city had been one of the greatest beneficiaries of the National Board. No other body could inspire the same confidence as

has the National Board. The commerce of the river will be most seriously interfered with next summer if there is danger south of Memphis.

DR. HILLIS, of Iowa, heartily indorsed the sentiments of the resolutions, but he did not think the way to reach Congress was by denunciation. Most congressmen are in favor of sustaining the National Board of Health. Some of the congressmen of the last Congress had axes to grind.

DR. BAILHACHE, of the Marine-Hospital Service, and also a member of the National Board of Health, said the officers of the first-mentioned organization were quite as competent to take charge of quarantine regulations as the officers of the National Board. There has been no legislation interfering with the constituting Act of the National Board. The quarantine act will expire by limitation soon.

COLONEL HATTON, of Tennessee, reiterated the statements of Dr. Thornton of the deep obligation of Memphis to the National Board. Perhaps the Marine-Hospital Service might do the same work, but the National Board has been tried and found effective; it has all the machinery; why make any change? We don't want the shotgun quarantine, but the only way to prevent it is by the strong arm of the National Government. The commerce of this country on the Mississippi is carried on by confidence. One day's stoppage of the commerce of this river would cost the country millions. Memphis will protect herself if the nation don't protect her.

DR. HUNT, of New Jersey, spoke of the heartfelt experiences given him by people from the South in regard to the efficacy of the National Board.

DR. RYAN, of Texas, spoke feelingly in opposition to the shotgun quarantine system.

DR. SIMMONS, of Charleston, S. C., bore testimony to the efficacy of the National Board on the South Atlantic coast.

DR. WHITE thought it certain that the sanitarians of the country, those who know best, approve of the National Board. It is equally certain that those who have attacked that Board know nothing of its real work and efficiency. Three hundred thousand people of this country are dying every year of preventable diseases. This Board is investigating the causes of such diseases, and its work must go on.

DR. DURGAN, of Arkansas, said four years' experience with the National Board had served to give his people great confidence in it.

There was entire unanimity of feeling in regard to the support to be given to the National Board, the speeches being of the most earnest and emphatic character, and the applause being frequent and heartfelt.

The resolutions finally passed unanimously.

OCTOBER 19TH—THIRD DAY.

A resolution was passed that the Advisory Council be instructed to consider the advisability of

AN INTERNATIONAL SANITARY EXHIBITION,

At Washington, or such other city as may be thought proper, and to report at the next meeting.

The following were elected

OFFICERS FOR THE ENSUING YEAR:

President—DR. EZRA M. HUNT, of New Jersey.

First Vice-President—DR. ALBERT L. GIBON, U.S.N.

Second Vice-President—DR. J. E. REEVES, of Wheeling, W. Va.

Treasurer—DR. J. B. LINDSLEY, of Nashville, Tennessee.

Executive Committee—DR. THOMAS L. NEAL, Ohio; T. J. TURNER, U. S. N.; DR. G. P. CONN, New

Hampshire; J. S. BILLINGS, U. S. A.; J. J. SPEED, Louisville; H. D. FRASER, South Carolina.

It was decided to hold the next annual session at Detroit.

DR. GIBON, U. S. N., chairman of the

COMMITTEE ON VENEREAL DISEASES,

submitted an elaborate majority report, signed by eight of the nine members of the Committee. It discusses the question in the most careful and elaborate manner, stating that there are about 2,000,000 cases of venereal diseases in the United States. It concludes by recommending an act intended to prevent the spread of contagious and infectious diseases.

REV. FRED. H. WINES, of Springfield, Ill., presented a minority report opposing legislation, fearing it would tend to the registration of prostitutes.

DR. BELL indorsed the majority report.

DR. HUNT deprecated the Association's indorsing the proposed act, although he thought it desirable that the subject should be considered by sanitarians.

On motion of DR. BILLINGS, the whole subject was laid on the table—33 to 22.

DR. GIBON earnestly protested against this disposition of the matter.

DR. ELISHA HARRIS, of New York, read the report of the

COMMITTEE ON VITAL STATISTICS,

which included the following resolution:

"Resolved, That the American Public Health Association recommends that the chief officer and expert adviser in the registry of vital statistics in the respective States, the three departments of the Federal Government, and the National Board of Health shall meet in conference at a convenient place during the ensuing six months, to examine and consider the outlines of laws, plans, and methods of securing the most complete and correct registration and public use of vital statistics in the several States throughout the Nation and in all branches of the public service." Adopted.

DR. O. W. WIGHT, health officer of Detroit, read a paper on *The Law Requiring Medical Men to Report Cases of Infectious Disease and Deaths to the Authorities*.

AFTERNOON SESSION.

THE REPORT OF THE TREASURER,

DR. J. BERRIEN LINDSLEY, showed total receipts of \$2838.67, including a balance of \$812.67 brought forward; disbursements aggregating \$563.84, leaving cash on hand, \$2274.63. Volume 7 of Public Health Reports is still in the hands of the printer. When it is issued and all liabilities met there will be a net balance of \$300. Referred to the auditing committee.

DR. J. J. SPEED, of Kentucky, read a paper on *The Relation of Health Associations to the Practice of Medicine*.

DR. G. B. THORNTON, President of the Board of Health of Memphis, read a long and elaborate paper on

THE NEGRO MORTALITY IN MEMPHIS,

in which he considered the sanitary and social conditions of the colored race. He reviewed at length the relative vital movements of the two races.

DR. JAS. F. HIBBERD, of Richmond, read a paper on *Propositions Concerning Vaccination*.

DR. A. W. CANTWELL, of the Board of Health of Davenport, Iowa, read a detailed history of *An Epidemic of Smallpox by Direct Importation from Germany on the Steamer Candia*.

A paper by JOHN W. DETWILER, of Bethlehem, Pa., on *Smallpox in Bethlehem and Suburbs*, was read by title.

The subject of

VACCINATION

was now taken up for general discussion.

DR. HUNT said there is such a thing as protected humanized virus, and there is also such a thing as protected bovine virus. The sources of trouble in vaccination are: Virus produced by unskilled propagators; virus improperly inserted; virus which has lost its strength by age; persons in bad health when vaccinated.

DR. DAWSON deprecated the inoculation of the cow with smallpox and the use of the virus thence produced as a preventive of smallpox.

DR. HILLIS dissented from the views of Dr. Hibberd on public vaccination. In his community public vaccination had been completely enforced. He thought Dr. Hibberd had given his people too much time to work up an opposition to vaccination. The attempt to enforce vaccination where there is no smallpox is liable to be attended with difficulty. In his town, the schools, places of amusement, churches, etc., had been closed, and only the briefest notice given of the intention to vaccinate.

DR. BECKWITH defended Dr. Hibberd. Unless the vaccine virus can be guaranteed pure, there can be no justification for compulsory vaccination. He stated a number of cases where ulcers, etc., had resulted, and one case where consumption had followed.

DR. GRIFFIN thought there was little likelihood of the cow being inoculated with smallpox. It had amused and surprised him that so many medical gentlemen were of the opinion that the lymph was derived from cows inoculated from smallpox patients. In regard to the variolation of the cow, he said most of those who have attempted it have come to grief.

DR. WRIGHT thought it possible, though extremely difficult, to convey human smallpox to the cow, and to reconvert it again to the human subject. He thought real vaccinia in the cow identical with smallpox in the human subject. There is no such thing as the substitution of one zymotic disease for another. So far as the State enforces vaccination, just so far is it bound to see the virus is pure. No man should be allowed to sell vaccine matter who is not responsible to the State. He paid a high tribute to Dr. Griffin's vaccine matter. He thought the time was not ripe for enforced vaccination. He absolutely knew vaccination was a protection against smallpox. He had vaccinated eleven persons in a pest-house, not one of whom had taken smallpox.

DR. BAILEY, of Louisville, thought we should rely upon moral suasion in educating the people up to vaccination. He had not much apprehension of the transmission of diseases by vaccination.

DR. RAYMOND, of Brooklyn, protested against spasmodic vaccination. Where vaccinators are kept constantly on duty, they are known and no prejudice is occasioned. Compulsory vaccination would never be heard of because it would never be needed if regular vaccinators were employed all the time. He thought local records should be kept of smallpox cases and vaccination, as of much better moral effect than the testimony of foreign experts on the efficacy of vaccination.

DR. ABBOTT, who read the first paper calling out the discussion, thought there was reason to believe in cases of spontaneous cowpox. It is most difficult to communicate from such animals the genuine bovine disease to other animals.

DR. HERRICK, of New Orleans, suggested that the disease was communicated to the cattle through the human beings by whom they were milked.

DR. DURGAN, of Boston, believed in persuasion, but he also believed in a law which compels wholesome

sanitary observances. Isolation and vaccination are two means by which we suppress a smallpox epidemic. Compulsory vaccination works well in Massachusetts and admirably in Boston. We use only animal virus on ivory points. The humanized virus is a little more certain to take on the first trial.

After the reading of several other papers and the passage of the usual resolutions of thanks, the Association adjourned.

NEWS ITEMS.

INDIANAPOLIS.

(From our Special Correspondent.)

THE MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.—The session of the American Public Health Association in this city, which has just closed, has been, upon the whole, a fairly interesting and successful one. The number of members registered is about one hundred and forty, an attendance not so great as that at some previous meetings, but still exceedingly good when the peculiar circumstances of this meeting are considered. The local committee of management was so constituted as to cause great distrust on the part of all respectable physicians, its chairman being a homœopathic physician who does not command the respect of his own fraternity, and who is commonly known among them, as he is among the citizens of Indianapolis, by his initials (M. T.) "Empty Runnels." When about a dozen of the older members of the Society, including the executive committee, arrived here on Monday, they were met by the report that this Runnels had made arrangements to bring in about one hundred and fifty homœopathic and physio-medical friends and take possession of the Association. He had prepared for the press a programme for the first evening, on which he had placed his own name as presiding officer, and seemed bent on making his unpleasant personality as conspicuous as possible. The local medical society had, by formal resolution, advised the regular physicians of the State to have nothing to do with the matter, and, at first sight, it seemed as if the best thing that a respectable medical man could do would be to keep aloof and out of the controversy which seemed to be impending.

The importance of the objects of the Association was, however, felt to be so great, and the destruction of its influence for good if it passed under sectarian control was so certain, that it was clear that the first duty of the members present was to endeavor to thwart, if possible, any movement to control the Society by local influences. To this end the Executive Committee refused to admit any new members until action should be taken on a Constitutional Amendment, which provided for the division of members into two classes—those having and those not having the right to vote. Accordingly, the first business of the first day's session was to pass this amendment after a rather warm discussion, in which Dr. Hewitt, of Minnesota, and Dr. A. N. Bell, of Brooklyn, combined with Drs. Verdi, Runnels, and others in the attempt to break down the barrier and allow every and any one to become a member by paying five dollars.

At first this action was looked upon with great distrust and irritation by the homœopaths—who thought they were going to be entirely excluded, but when they found that the Executive Committee was electing homœopaths and approving the reading of papers prepared by them, and was simply judging of their qualifications from the standpoint of sanitarians, the excitement cooled down, and by this time some of the leaders in the opposition were quite satisfied with the result.

The second point upon which it seemed as if there

might be some serious differences of opinion was with regard to the National Board of Health. Dr. Hewitt, the Secretary of the State Board of Health of Minnesota, tried hard for two or three days to organize an opposition to any action in favor of the National Board, and was always to be seen in confidential talk with one or another member urging his view. He does not represent the views of his Board which is decidedly friendly to the National Board, and it is a little difficult to get at the cause of his persistent hostility.

The only explanation to be obtained was from a big northwestern member, who when questioned on the matter said, "Well you see Hewitt is what we call a sorehead. He is very smart, thinks very highly of himself, and generally is down on anything that he can't control. He wasn't consulted about the Board, he can't run it, and he is a little afraid of it."

When the subject of the National Board and its present anomalous position came before the Association on Wednesday evening, in the form of a long report from Dr. Cabell, President of the Board, it was very soon apparent that the sentiment of the meeting was almost unanimous in favor of the support of one national sanitary organization, and moreover, that this feeling was a very strong and earnest one. Speaker after speaker representing all parts of the country denounced in strong terms the action of Congress in limiting the scope of the work of, and refusing funds to the National Board. The only dissenting voice came from the representative of the Marine-Hospital Service, who claimed that that service could do the quarantine work better than the National Board, and ought to have it. In this opinion he seemed to be quite alone, the general expression of opinion indicated a decided want of confidence in the Marine-Hospital Service. After the meeting was over a prominent member of the American Medical Association asked me how far the Code of Ethics was applicable to a medical department represented in that body, and whether, when such a department persistently and systematically sought to break down and destroy another medical department simply to get possession of funds and patronage, it was not clearly a violation of the Code? I propound his queries for your consideration.

The event of Thursday morning was the report of the committee on venereal disease by Dr. Gihon, of the Navy, and the laying it on the table by the motion of Dr. Billings, of the Army. This result, which seems to have been totally unexpected by the committee, was by no means satisfactory to it, and Dr. Billings was accused of having taken an unfair advantage of parliamentary tactics to suppress debate and permit of no reply to his own rather sarcastic speech on the subject. Dr. Billings reply to this, as I heard him give it to one of the aggrieved committee-men, was that he had specially tried to have the fullest possible discussion, and had requested the President to recognize him only after all who desired to speak had had the opportunity—telling him what he proposed to do which would of course stop all further debate.

Dr. Billings said he was so sure of the folly of bringing the Association into conflict with the medical profession of the country, by approving a law which would practically make it compulsory upon physicians to reveal the secrets of their patients, and also for the reasons given by him in his remarks, that he certainly meant to kill the measure if possible—but that he had to make the motion when he did or not make it at all.

In this connection I must allude to the very ludicrous termination of the movement for an international sanitary exhibition. Circulars, calling a conference of State boards of health with the National Board and the American Public Health Association, and purporting to be signed by a number of well-known sanitari-

ans, and by Dr. Newell of New Jersey, as secretary of a conference of sanitarians held in New Jersey, in September last, had been sent to all the above-mentioned organizations, asking them to send delegates to a conference to be held at Indianapolis, to organize the proposed exhibition. A number of delegates were present and the meeting took place in the reading-room of the Grand Hotel. Dr. Newell took the chair and announced that the objects were to select a name for the organization, to determine where the exhibition should be held, what it should contain, etc. After a moment's silence, one delegate mildly suggested that it would be as well to decide first whether there should be any exhibition at all. Whereupon, Dr. Billings took the floor and showed that the conference of sanitarians of which Dr. Newell claimed to be secretary, consisted of four gentlemen whose names were quite unknown to the Secretary of the State Board of Health of New Jersey, that permission to use the names of the supposed signers of the call had been obtained under a species of false pretences, and that the Public Health Association repudiated any connection with the movement. He concluded by advising those present to have nothing to do with the matter and bowed himself out of the room, whereupon all present got up and followed him leaving Dr. Newell in the chair, alone in his glory.

Your correspondent was present as a sort of self-constituted delegate, and anything more ludicrous than the expression of mingled surprise, humiliation, and wrath, on the face of the would-be promoter, as he saw the procession file past him, I have never had the good fortune to see. One delegate, upon reaching the hall, christened Dr. Billings as "the sanitary refrigerator," amid shouts of laughter.

The complications arising from the unfortunate composition of the local Committee of Arrangements resulted in an almost total want of the social element, so far as the residents of the city were concerned. There were no receptions or entertainments, and very few of the local physicians attended the meetings. I am by no means sure, however, that this was not all the better for the objects of the society.

The selection of the officers for the next year seems to have given very general satisfaction, and the prevailing opinion is that the meeting next year at Detroit will be a great success.

PROGRESS OF THE YELLOW FEVER.—The despatches from Pensacola, Florida, are incomplete this week, as no bulletin was telegraphed on the 22d. On the other days the record was as follows:

Dates.	Cases.	Deaths.
October 17th,	50	3
" 18th,	56	3
" 19th,	53	9
" 20th,	42	2
" 21st,	40	3
" 22d,	—	—
" 23d,	37	1
	278	21
To October 16th,	1680	143
Total reported to date,	1958	164

The new cases reported during the week ending 16th inst. were 380. The disease is thus apparently decreasing.

The investigation into the origin of the epidemic has been turned over to Dr. Wm. Martin, of the U. S. Navy. Major Walthall, of Mobile, who was originally suggested for this work, was prevented from undertaking it by the pressure of his present duties in con-

nection with the sick of the fever-stricken city. Dr. Jerome Cochrane, of Alabama, in a letter to Major Walthall, makes the following suggestions as to the lines of inquiry:

"The history of every infected vessel that has been in the bay of Pensacola this summer should be carefully studied in all its possible antecedents and consequences—the history of the Saleta, the Accame, the Iris, the Rosa B—, the — McNeil, the Duc Amici Luigi, and all the rest.

"The Saleta and the Accame should be specially studied. I am sure that they got their infection either at the quarantine station or in the city itself; and I am very much of the opinion that a thorough study of the cases of these two vessels will solve the problem of the introduction of the fever. One notable fact in connection with all of these infected vessels is the fact that the officers were the first to have the fever; the officers—that is to say, the men—whose freedom of movement was least restricted, and who were most frequently at the supply house, and most frequently ashore.

"The first cases on shore did not occur along the shore of the Bay, near the wharves, as might have been expected on the hypothesis that the fever was brought from the shipping, and almost a whole month passed away after the presence of the fever in the city was recognized before any stevedore, or any person accustomed to work on the ships, or any of the women in the lewd houses frequented by sailors, was attacked by it. It would seem to follow that the fever was brought in, not by the common sailors, but by the officers. Still, no case has been traced to any connection with the Saleta; and no subsequent case has occurred at Mrs. O'Neal's, where the captain of the Accame died, or anywhere in the neighborhood of Mrs. O'Neal's.

"There can be no doubt that the fever had really found a footing in the city many days before its dread presence became known, either to the people or to the health authorities; and the most persevering efforts should be made to discover the really "first cases." To this end the antecedents of the first cases that were recognized should be thoroughly traced out; and in this connection an investigation should be made of every case of fever that occurred anywhere in the neighborhood of the district that first became infected for two or three weeks or a month before the announcement of the fever on the 28th of August. In this list came the cases in the Rosario family, near the jail, and several other cases that occurred in that immediate neighborhood, whose names I cannot now recall. The probabilities all point to this locality as the *fons et origo* of the epidemic, and here the research should be made in a spirit that refuses to be baffled. Spend days and weeks here, if necessary. Interrogate every human creature in the neighborhood, and note every smallest occurrence. Somewhere about here the key of the problem is to be found."

CHOLERA IN YOKOHAMA, JAPAN.—During the two weeks ending September 25th, there were in Yokohama and vicinity 101 new cases of cholera and 85 deaths from the disease. This is a very notable and encouraging decrease, the figures for the first twelve days of the month having been respectively 283 and 223. The totals since the commencement of the epidemic, on April 26th to date, are 3610 cases and 2308 deaths, giving a mortality of a little over 63 per cent. None of the foreign residents are affected at this time. The total number of deaths from cholera in the Empire is stated, in a Yokohama paper, to have been 21,030 on September 10th.

NO CHOLERA IN MOROCCO.—The National Board of Health has received information through the Depart-

ment of State from Mr. Mathews, United States Consul at Tangier, dated Sept. 18, that cholera is not prevailing in Morocco. "I may add, also," says Mr. Mathews, "for the benefit of American merchants and tourists, that of the telegrams from Madrid to the London papers announcing the appearance of cholera at Tangier, and that the Spanish government had adopted rigorous measures to prevent the introduction of the disease into Spain, the former part is without foundation. Neither at Tangier nor at any place in Morocco have contagious diseases broken out; if, unfortunately, such had been the case, even the least sign of disease, I could not have failed to report the facts in my weekly returns to the National Board of Health at Washington."

THE SANITARY COUNCIL OF THE MISSISSIPPI VALLEY held its Annual Session at Indianapolis, on Thursday, October 18, Dr. GUSTAV DERVON, President, in the chair.

Dr. J. H. RAUCH, of Chicago, the Secretary of the Council briefly stated the objects of the meeting.

On motion of Dr. BAKER, of Michigan, a committee, consisting of one from each State represented in the Council, was appointed to formulate an expression of opinion with regard to the work of the National Board of Health and the necessity for its continuance; said committee to report at an adjourned meeting to be held at 5.30 P.M.

On motion of Dr. THORNTON, of Memphis, it was decided to hold the next annual meeting of the Council at Jackson, Miss.

The Council then adjourned to 5.30 P.M., at which hour it was again called to order by the President, and the committee appointed at the morning session, through its chairman, Dr. J. J. Speed, of Kentucky, submitted the following:

Resolved, That the Sanitary Council of the Mississippi Valley earnestly deprecates any effort to curtail the work of the National Board of Health as likely to result in a renewal of panic and unnecessary interference with commerce and travel.

Resolved, That, in the judgment of this Council, founded upon intimate and extended experience, the river and rail inspections of the National Board of Health are essential to secure the confidence of the Mississippi valley and thus to prevent avoidable interruption and disturbance of business interests, and the Council, therefore, petitions Congress to give such aid to the National Board of Health as will enable it to efficiently carry out its system of sanitary inspection for the prevention of the spread not only of yellow fever and smallpox, but of all epidemic, contagious, or infectious diseases.

Resolved, That this Council fully indorses the action of the American Public Health Association, as set forth in the resolutions concerning the National Board of Health, adopted at the session of the Association held October, 18, 1882, and urges each organization represented in the Council to use its utmost endeavors to influence members of Congress from their respective districts to promote the necessary legislation to secure the end above indicated.

Resolved, That the Secretary of the Council be instructed to transmit a copy of these resolutions to the American Public Health Association and to each organization represented in the Council."

The resolutions were unanimously adopted, and on motion the meeting adjourned.

OPPOSITION TO KOCH'S THEORIES AS TO THE BACILLUS TUBERCULOSIS.—Before a largely attended meeting of the Philadelphia County Medical Society, held Wednesday, October 18th, Dr. H. F. FORMAD

made a demonstration of the bacilli tuberculosis, and made some remarks in which he claimed that so far there had been no reliable demonstration of the etiological relation of these bacilli to phthisis. He did not dogmatically deny it, but did assert positively that it could by no means be considered as proved. He objected to the importance attached to the reaction of those bacilli to certain staining fluids, because from his own experiments he had found it not to be peculiar. The result of Koch's inoculation experiments he discredited, because the successful ones had been made only on animals that have a very strong predisposition to tuberculosis, and contract it from inoculation of non-specific substances; while others claimed to be successful, he regarded as cases of pseudo-tuberculosis.

The view, in regard to the bacilli tuberculosis to which Dr. Formad inclined was that they do not cause the disease, while it is likely that they do "condition the fatal issue."

The remarks, which will be published in full hereafter, were received with marked interest, and were followed by a brief discussion, participated in by Drs. Wood, Gross, Tyson, Bartholow, Cohen, and others. None of the speakers seemed to have adopted Koch's views, and it was spoken of as a matter for congratulation, that one so well fitted as the first speaker, should have presented the arguments against them; since the truth would be arrived at all the more surely if the new doctrine were put upon its defence and not allowed to establish itself without due scrutiny.

THE KING'S COUNTY MEDICAL SOCIETY AND THE NEW YORK CODE.—At the stated meeting of this Society held on the 17th instant, the consideration of the new Code came up as special business. Dr. E. R. Squibb presented a series of resolutions condemnatory of the Code, upon which further action was postponed until the next meeting.

RESIGNATION OF DR. OLIVER WENDELL HOLMES.—DR. HOLMES has just resigned the Parkman Professorship of Anatomy in Harvard University, to which he was elected thirty-five years ago, as successor to the late Dr. John C. Warren. It is understood that Dr. Holmes intends to devote himself entirely to literature.

THE LOWELL INSTITUTE LECTURES.—PROF. WILLIAM B. CARPENTER, the distinguished English physiologist, has just begun a course of six lectures on "The Physical Geography of the Deep Sea." They are being delivered in Boston before the Lowell Institute.

NEW YORK POLYCLINIC.—A polyclinic has been organized in New York for the purpose of giving post-graduate instruction in clinical medicine and surgery, didactic lectures being excluded from their methods of teaching. A dispensary has been opened under the direction of the faculty. There will be five sessions of six weeks each, commencing November 7th. The faculty consists of Drs. Leaming, Ripley, Hudson, Elsborg, Gray, Brandeis, Robinson, Bronson, Fowler, Wyeth, Gerster, Mundé, Wylie, Gruening, Webster, Gibney, and Stillman.

CARTWRIGHT LECTURES.—DR. W. T. BELFIELD, Lecturer on Physiology in Rush Medical College, will deliver the Cartwright Lectures this winter. He has chosen "Disease Germs" for his subject.

OBITUARY RECORD.—Died in Brooklyn, N. Y., October 12, 1882, ABRAM LELAND LOWELL, M.D., aged 50 years. He was born in Chester, Vermont, the son and the grandson of a physician, both distinguished practitioners, and was easily inducted into the study of medi-

cine, and early manifested a fondness for surgery and anatomy. He was graduated in arts at Harvard University in 1857, and in medicine at the University of the City of New York three years later. He was an interne on the surgical side at Bellevue and Charity Hospitals in New York soon after graduation. During the war he was for a time the surgeon of the steamship *Arago*; a little later he occupied a very responsible position in the Pension Bureau. About 1872 he took up his residence in Brooklyn, and soon afterwards became an attending surgeon to St. Peter's Hospital, where he made a record for conservatism, skill, and self-sacrificing interest in his work that will long be held in memory by the surgical patients of that institution.

HEALTH IN MICHIGAN.—Reports to the State Board of Health for the week ending Oct. 14, 1882, indicate that consumption, influenza, and neuralgia have increased, and that diarrhoea, pneumonia, erysipelas, and puerperal fever have decreased in area of prevalence.

Compared with the average of reports for the months of October in the preceding five years, all diseases named in this report, except smallpox, were less widely prevalent during the week ending Oct. 14, 1882, than has been usual.

Including reports by regular observers and by others, diphtheria was reported present during the week ending October 14, and since, at twenty-three places, scarlet fever at fourteen places, measles at two places, and smallpox at four places, as follows: in Orange and Ionia townships, Ionia County, October 13; at Grand Rapids, October 14; at Niles (one case), October 19.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 16 TO OCTOBER 23, 1882.

WILLIAMS, JOHN W., Surgeon.—To proceed to Vancouver Barracks, Wyoming Territory, and report upon arrival to the Commanding General, Department of the Columbia, for assignment to duty in that Department.—*S. O. 168, Military Division of the Pacific, October 13, 1882.*

MOORE, JOHN, Major and Surgeon, Medical Director, Headquarters Department of the Columbia.—Granted leave of absence for one month, with permission to apply to Headquarters Military Division of the Pacific for extension of one month.—*S. O. 145, Department of the Columbia, October 3, 1882.*

LORING, LEONARD Y., Captain and Assistant Surgeon.—Granted leave of absence for four months.—*S. O. 243, A. G. O., October 18, 1882.*

BYRNE, CHARLES B., Captain and Assistant Surgeon.—Leave of absence extended ten days.—*S. O. 243, A. G. O., October 18, 1882.*

BUSHNELL, GEO. E., First Lieutenant and Assistant Surgeon.—Leave of absence extended one month.—*S. O. 244, A. G. O., October 19, 1882.*

APPEL, A. H., First Lieutenant and Assistant Surgeon.—Granted leave of absence for one month.—*S. O. 168, Department of Dakota, October 14, 1882.*

CARTER, EDWARD C., Assistant Surgeon.—Now at Camp Price, to proceed to Fort Thomas and report to the Commanding Officer of that post for duty.—*S. O. 159, Department of Arizona, October 11, 1882.*

EVERTS, EDWARD, Assistant Surgeon.—Assigned to duty at Fort Coeur d'Alene, Indian Territory.—*S. O. 145, Department of the Columbia, October 3, 1882.*

TAYLOR, A. W., Assistant Surgeon.—Relieved from duty at Fort Supply, Indian Territory, and assigned to duty at Fort Cummings, New Mexico.—*S. O. 208, Department of the Missouri, October 16, 1882.*

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked, Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS should be addressed to No. 1004 Walnut Street, Philadelphia.